Book of SUCCESSFUL FIREPLACES

FRANK G. DYER
416 S. E. 20
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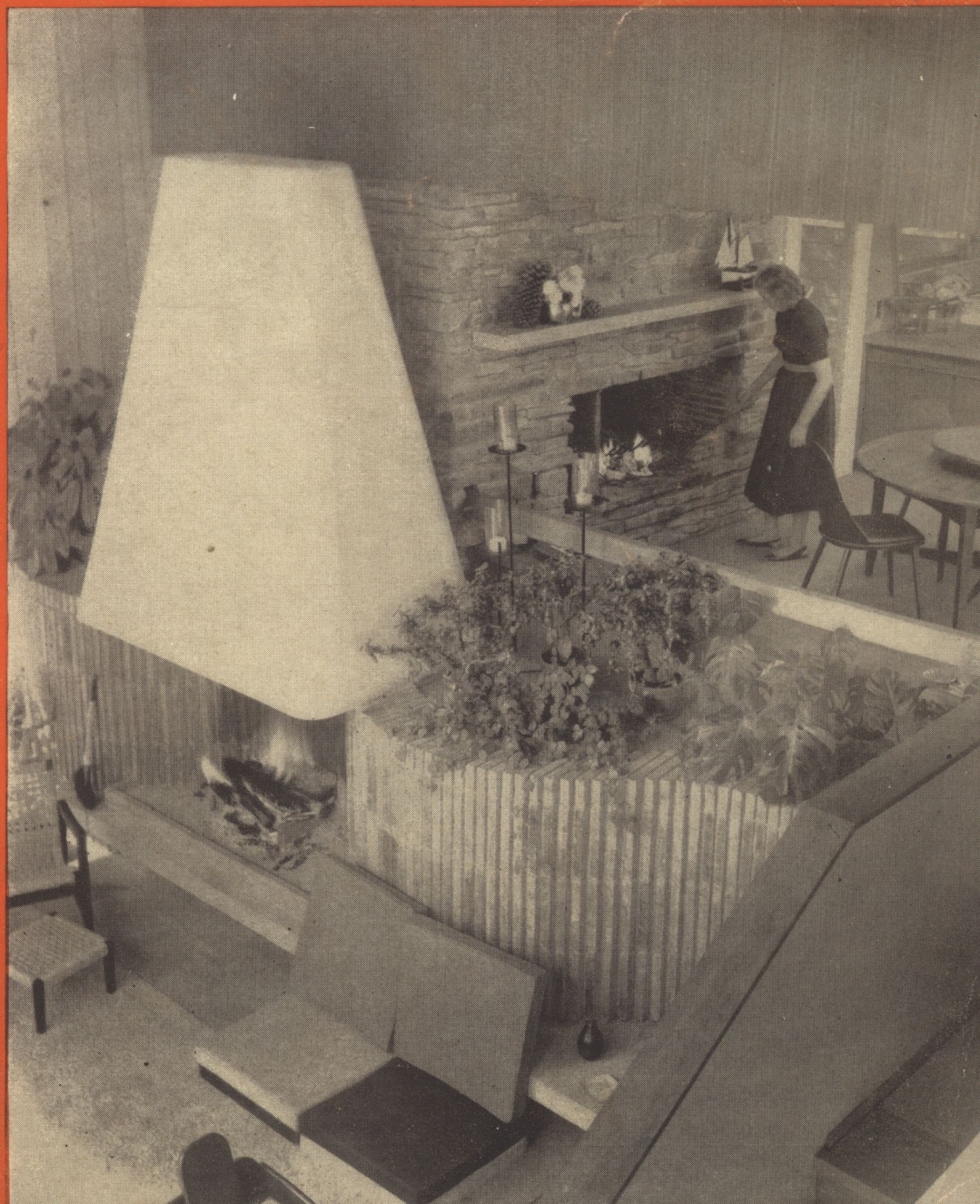
HOW TO BUILD THEM



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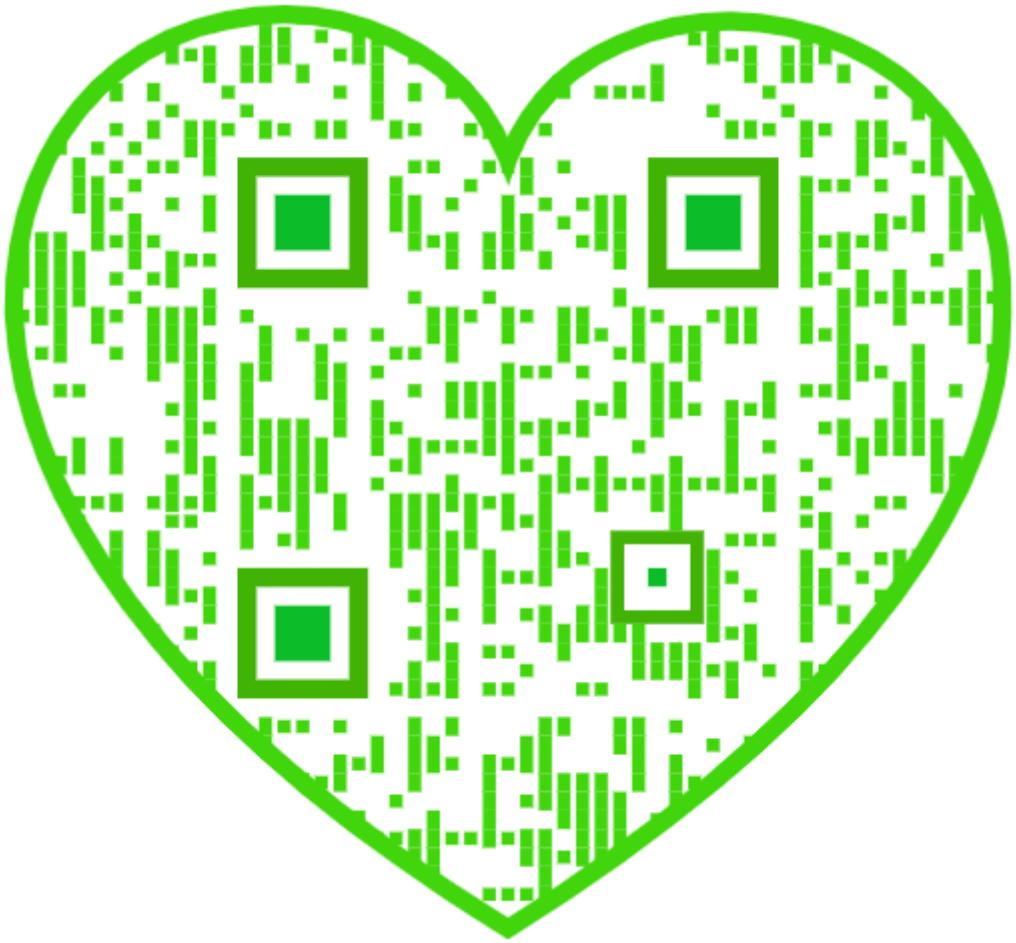

Book of . . .

SUCCESSFUL FIREPLACES

. . . How to Build Them

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Greeting ~

Reader and Friend—The art of living is the art of all arts. Few of man's blessings contribute so much to life's satisfactions as the joy of an open fire. Hence whatever contributes to the warmth and serenity of the fireside takes high rank among the benefits of humanity. Let us emphasize three facts about fireplaces.

First, fireplaces that are built right do not smoke. Designs and simple directions contained in this book point the way to success in fireplace construction. You minimize your risk of disappointment when you stick to these basic principles. Of the failures which we have investigated, we recall few in which the reason was not readily found in faulty planning or construction.

Second, for maximum heat with an open fire, the solution is the Heatsaver. It circulates warm air through the interior and brings an ample and even heat which no masonry fireplace can equal, however constructed.

Third, outdoor fireplace satisfaction can be had at small cost. Instead of multiplying designs, we have suggested a few units that have proven to work well. They can be combined into more elaborate structures if the owner desires.

Beyond the practical aspects of the fireplace, we seek to join you spiritually in the satisfactions that come from communion with the open flame and the kindred souls within its radiance. Happiness to you all.

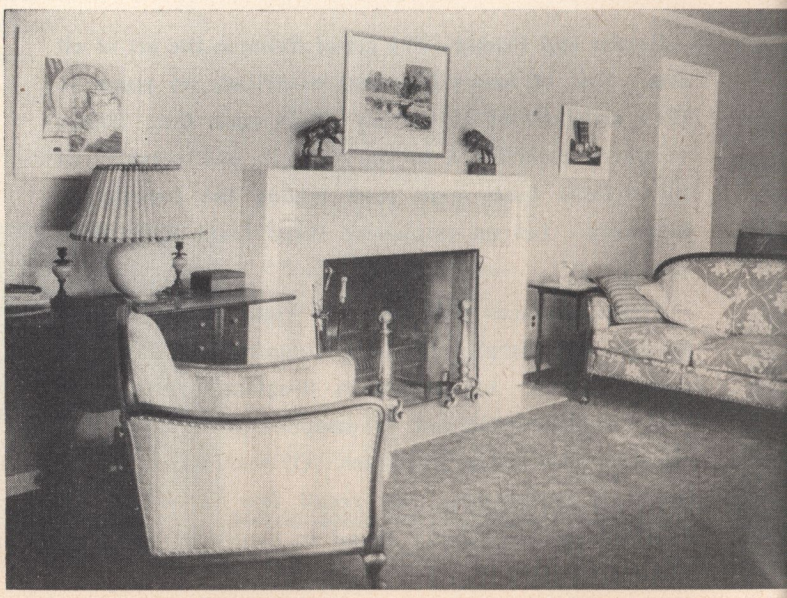
The Donley Brothers Co.

FACTORS IN FIREPLACE PLANNING

PLANNING the location, size and general character of your fireplace is a subject worthy of careful study from the time your home project begins to take shape. Several factors are involved, the first of which is, perhaps, the chimney. It is a definite feature of the exterior architecture. In some cases, its location is determined by the desirability of enclosing several flues in the same stack, including, perhaps, that of the basement heating plant. So the task of locating a fireplace is a work of co-ordination, in which utility and esthetic effect must each bear their due part.

Interior Planning—This includes consideration of proportions of the room as a whole, the way in which it will be used and the decorative scheme contemplated. Just as industrial plants are planned with reference to the sequence of operations, it is necessary for the designer of a home to enact, mentally, the experiences of those who will enjoy the fireplace, from the first glimpse on entering the room to the final relaxation of dozing, reading or chatting within the aura of its rays.

The Vista Effect—Many fine homes in the past have been planned with rooms in series, connected by double doorways, with a living room fireplace at the end of the vista—a heart warming reminder to occupants of any rooms, so connected, of the repose and warmth awaiting them. Fireplaces so located tended toward ornate design with emphasis on mantel ornaments and on the picture framed above. This pattern has grown less mandatory in later decades, but the desirability of framing the fireplace in a spacious doorway, as one approaches the room, still has sanction.



At the top of the page, living room fireplace in the home of Anthony G. Nosek, Brecksville, Ohio.

At the right, living room fireplace of Mrs. Burnetta Carroll, Shaker Heights, Ohio.

Trends in Design—While too stable an institution to be subject to whims of style, fireplaces participate in trends of domestic design. With the prevailing simplification of home life, it is not surprising to find more interest in the possibilities of the small fireplace. The compact, low-cost home needs a fireplace in keeping with its prevailing scale. Such a fireplace need lack nothing in charm and comfort.

More corner fireplaces are being built because in many a compact interior the corner offers the one answer. There has been a distinct gain, too, in the merit and originality of corner fireplace designing.

Rustic and Early American period types are holding their own but otherwise there has been a lapse of interest in strict period treatments. In fact, designers are borrowing and simplifying whatever they like in the details of any period without being bound by its traditions. The grander and more severely classic types are seldom encountered for the reason that it is no longer customary to build homes of moderate size that imitate mansions. The colonial or English farmhouse is much more likely to be the basis of the prosperous suburban home of today.

Modernism is no longer the separatist cult of recent years. It has won many victories and feels that it can meet its old antagonists half way in creating effects whose sole aim is to be inviting, comfortable and homelike.

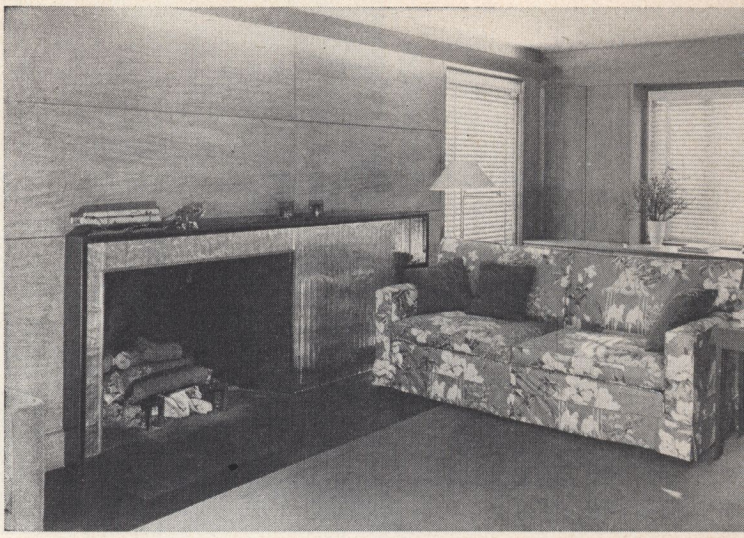
Side, End or Corner — The real consideration in locating a fireplace is the creation of an area of comfort and repose in the room, subject to the least disturbance from those moving about; commodious in its room for comfortable chairs and perhaps a couch; convenient in relation to books, to smoking facilities, or whatever fireside comfort may include.

Such roominess is most likely to be found at the side or end of a room. An end position is very likely to be preferable on grounds of seclusion. A side position may avoid cramping of furniture.

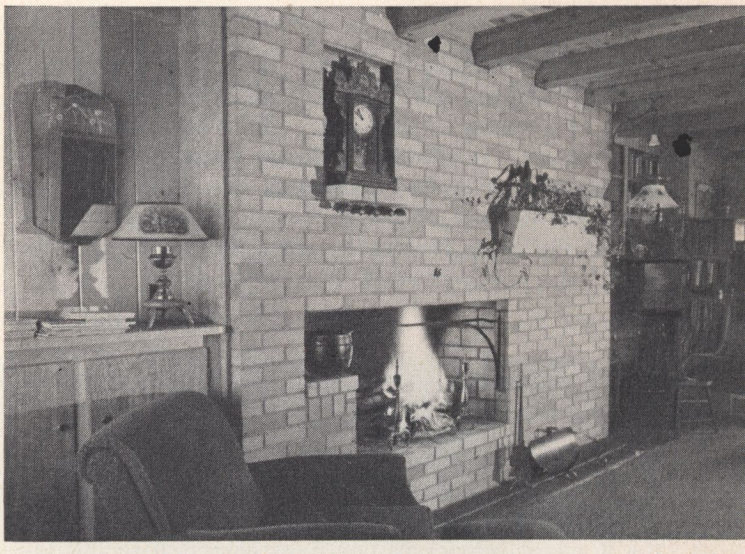
The sense of security and repose that goes with full enjoyment of a fire is impaired if there are doorways flanking the fireplace or even one doorway close to it. Similarly, windows in the range of vision impair concentration of interest on the fireplace. If needed for light, they may be located above the line of vision, flanking the chimney, and perhaps with book shelves below.

Question of Projection—A fireplace may stand flush with the wall, it may extend wholly into the room or it may project for a part of its depth. The greatest freedom comes in the case of a fireplace built against an outer wall, with a stack for its sole use.

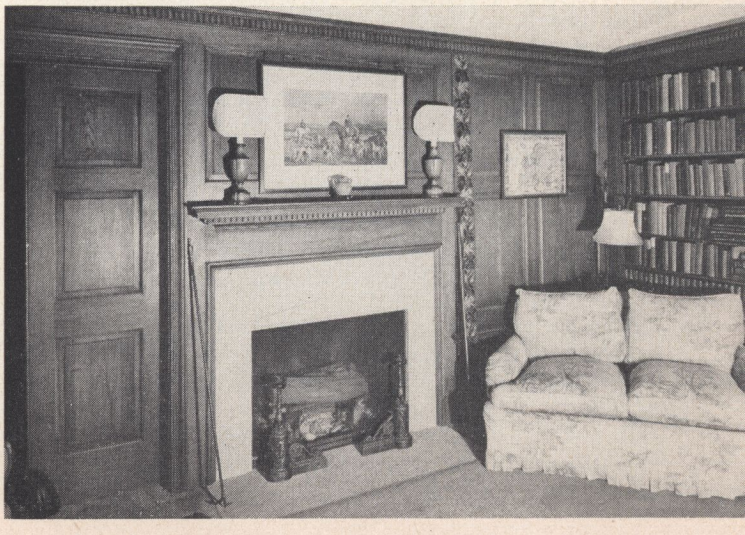
Where the fireplace is built against a partition, employing a stack with other flues, the question of pro-



There is a charming off-center effect in this fireplace planned by Architect Eleanor Raymond for the home of Henry E. Wile, Weston, Mass.



Skill in breaking up a large masonry expanse is shown in this fireplace in the home of Mr. & Mrs. George Kralik, Royalton, Ohio.



This excellent library fireplace is one of several in the home of Kenneth L. Allen, Gates Mills, Ohio.

Spacious, semi-circular, raised hearth and original tiles around opening distinguish this fireplace of Mrs. Edith Morgan of Stockbridge, Mass.

jection is complicated by disposition of spaces in adjoining rooms and a partial projection is the most frequent solution.

While the extreme simplicity of modern treatments tends toward the flush fireplace, much is to be said in favor of a degree of projection. It helps to emphasize the fireplace. It affords additional space at the wings for the placing of fuel containers, fire tools or furniture. In the case of the Heatsaver Fireplace, projection is distinctly preferable, since the grilles may be placed at the sides, rather than on the face.

Period Treatments — The modern movement in domestic design, which once represented merely an aversion to traditions, has reached a maturity that affords a fairly well digested technique.

Much agreeable designing of the present day is quite free from conscious period influence. In evaluating strictly modern design, it must be borne in mind that the fireplace is perhaps our most conservative institution. On grounds of strict utility, its use might be greatly curtailed. It persists and gains friends, because people see in it a satisfaction that has endured through the centuries.

Colonial Fireplaces — An offshoot of the Georgian period is found in Colonial and Early American modes. They had the advantage of being produced in a time and place in which simple technique and native materials ruled. The enduring vogue of Colonial architecture makes it quite appropriate that Colonial precedent be consulted in the fireplace design.

These precedents range from Classicism—often expressed in white enameled woodwork—to the ruder effects of fireplaces whose functions included cooking.

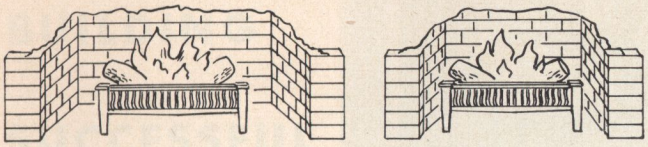
In somewhat refined rendering, such fireplaces lend great charm to the present-day living room and recall the origin of the term—a room where the family lives. The presence of a crane and a convenient kettle offers constant temptation to brew tea before the fire.

The Question of Size — Home planners often need to be warned against the sentimental desire for "a great big fireplace". They forget that a great big fire would probably drive them out of the room. They need to be told that a small fire in a big fireplace is rarely satisfactory.

There is much greater heating efficiency, with much less nuisance, in a fireplace 30 inches wide, well filled with flame, than there is when the same fire is built in a 48-inch fireplace.

Fireplace in the Marine Room of Richards Ford at Southport, Conn., is the work of Architect Edward Steese.

Handicap of Too Large Fireplace



At left—fireplace too large for fire. Radiates less heat than where flame fits the fireplace snugly—as at right.

Heat radiated from a fireplace comes to a large extent from the heated brickwork that surrounds the flame. The closer the brickwork to the flame, the more it is heated. In the case of the 30-inch fireplace in the diagram above, the back and the sides are both heated. In the 48-inch fireplace, only a portion of the back masonry is heated. More heat undoubtedly goes up the chimney.

The larger fireplace requires a larger flue. In case of the 48-inch opening, the flue lining would have to be the 16″ by 16″ size, while the smaller, 30-inch fireplace would be adequately served by a 12″ by 12″ flue. To maintain a steady draft, the larger flue would need 50 per cent more air from some source. With a moderate size fire, it probably would not get such a volume of air. The up-draft would tend to be sluggish and, if ventilation were restricted, there would be a tendency to down-draft. Presuming a good draft were established in the larger flue, there would plainly be more cold air to heat.

So, plan no larger fire than your room requires and plan the fireplace to fit the fire snugly, if you want maximum warmth and freedom from trouble.

Air Supply for Combustion — It takes air to run a fireplace—air for draft, oxygen for combustion. In homes of past generations it was sometimes supplied over-abundantly. The roaring logs drew drafts through every chink and cranny of window or door. Chairs with wings at the level of the face were provided to keep off drafts from the rear, while the face and shins toasted.

Until recent times there has been little difficulty in securing moderate up-draft needed for the operation of the present-day fireplace. But newer techniques of weatherstripping, caulking and use of special gaskets on casement windows have made many a modern interior tight as a drum. If a furnace or an incinerator is operating, the only source from which they can get needed combustion air is down the fireplace chimney. Down-draft thus created prevents maintaining a fire on the hearth. Even if there is no other fire in the interior, perfect tightness prevents the building of a satisfactory open fire.

The solution to all these problems, as well as the problem of decent respiration, is ventilated interiors. The slight opening of a basement window, if there is no other ventilating device, will generally provide air needed for the fireplace, for the furnace, the incinerator, the lungs.

Cooking fireplace in Dunham Tavern, oldest structure in Cleveland, as restored by the Society of Collectors, who have preserved the Tavern as a relic.

At the top, fireplace of Architect Reinhardt M. Bischoff shows effectiveness of flanking book shelves.

Similar arrangement of books is shown in unidentified picture just below.

At lower left—Stone fireplace in an experimental underground home in Youngstown, Ohio.

Fireplace in home of J. E. Loftis, San Antonio, Texas, Bartlett Cocke, Architect, at lower right.

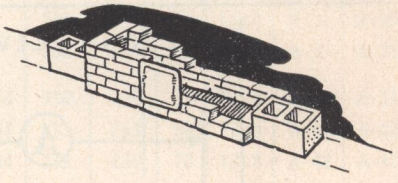
BUILDING SUCCESSFUL FIREPLACES

WHETHER a fireplace is to be constructed by a building craftsman or is the result of an owner's determination to "do it himself", there are certain principles and proportions which owner, architect and builder should heed, or risk a doubtful result.

Plans Are Furnished—Difficulty is avoided by sticking quite closely to the plan, elevation and profile shown. This is a convenient solution since a sheet with similar plans, directions and construction hints is attached to the crate of every Donley Damper. We do not claim, by any means, that it is impossible to build a successful fireplace from other plans. However, the design here offered represents a consensus backed by long experience. It permits a wide range of adaptation to exterior design. We see no reason to seek variation in interior proportions affecting the actual conditions of combustion.

Two Methods of Building—The generally accepted practice, and the one which we recommend, is to complete the rough brickwork of the fireplace from ash pit footings to chimney top before undertaking the installation of the finished interior and front. There is an alternate method by which both rough masonry and the finished front and interior are built up together. The second is presumed to save some of the cost, but it also results in more faulty fireplaces, and corrective work is more difficult and costly. The first, and preferred, method permits using a more experienced man in finishing the fireplace—such a man as would not, ordinarily, be interested in installing rough brickwork, which could be done by a mason engaged in less exacting tasks.

Foundation—The heavier weight of the chimney compared to the adjoining walls requires that footings under it be larger than other places to avoid unequal settlement. This need for larger footings under the chimney applies if it is built with a basement or for a home without a basement. And the foundation must be below the frost line.

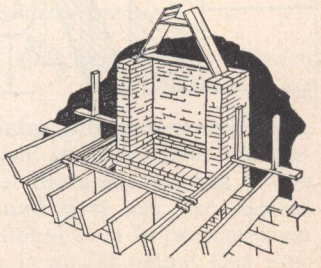


Recess that forms the base of the ash-pit, incorporated in the foundation wall.

The Ash Pit. This is the hollow space below the hearth into which the ashes are passed through a small metal dump door located in the hearth.

A 12″ x 8″ metal door is a convenient size for the occasional removal of the ashes from the ash pit. Page 8 shows the usual type of ash pit. Ash pits at grade level are shown on later pages.

Hearth Construction—It is important that the hearth, including the fore-hearth outside the fireplace area, be wholly supported by the chimney. Compromise support, in which the floor is made to carry part of the load, entails risk of cracking the hearth, should floor

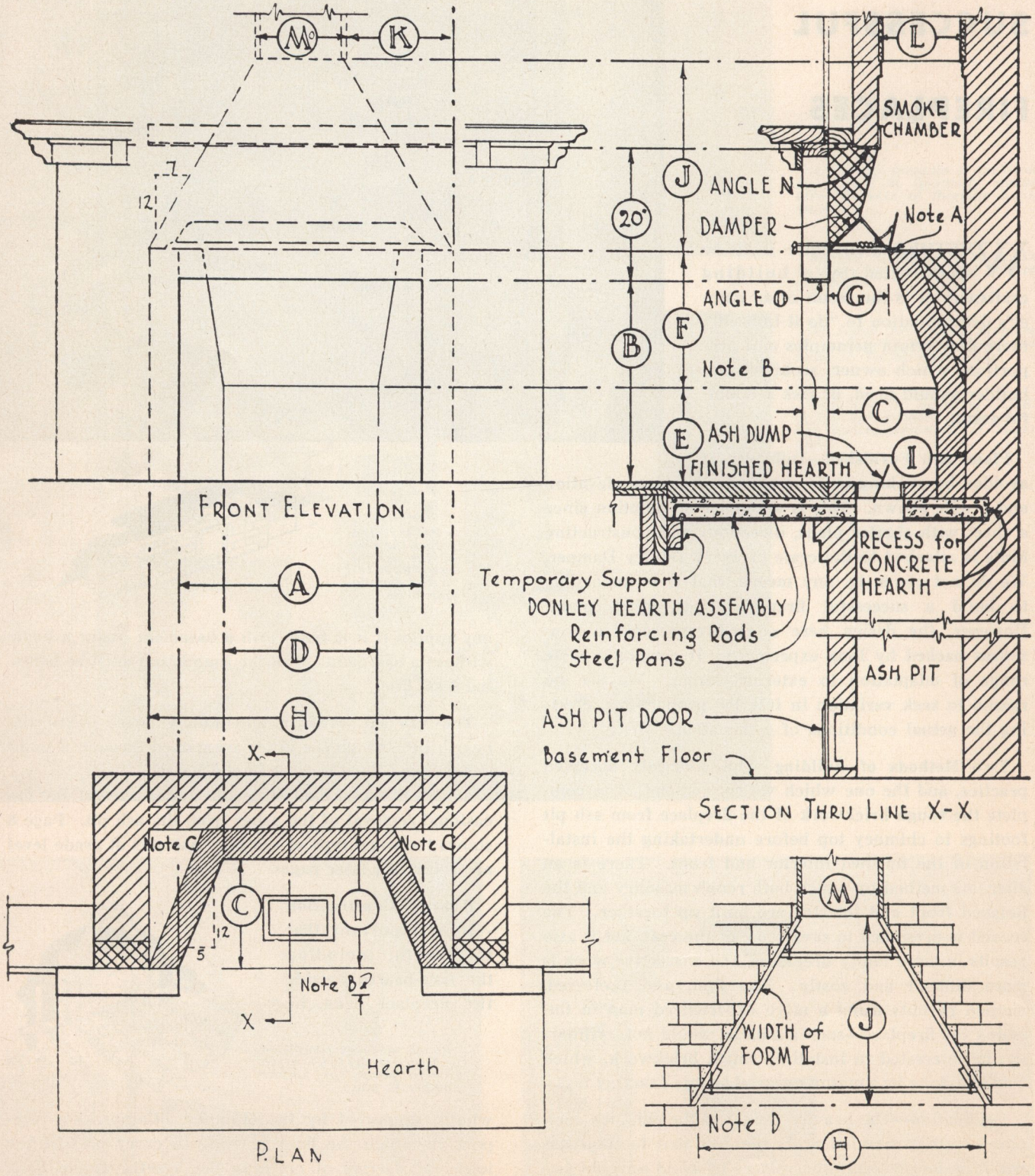


Rough masonry completed to damper height with wooden form for smoke chamber in place.

(Continued on Page 10)

Construction Sketch of Successful Fireplace

See Table of Dimensions on Opposite Page



Notes on Construction Sketch and Dimension Table

Note A—The back flange of the damper must be protected from intense heat by being fully supported by the masonry. At the same time, the damper should not be built in solidly at the ends but given freedom to expand with heat, as shown in the front elevation on the opposite page.

Note B—The drawing indicates the thickness of the brick fireplace front as four inches. However, no definite dimension can be given for this because of the various materials used—marble, stone, tile, etc., all having varying thicknesses.

Note C—The hollow, triangular spaces indicated in the plan, behind the splayed sides of the inner brickwork, should be filled to afford solid backing. If desired to locate a flue in either space, the outside dimensions of the rough brickwork should be increased.

Note D—A good way to build a smoke chamber is to erect a wooden form consisting of two sloping boards at the sides, held apart by spreaders at the top and bottom. Spreaders are nailed upward into cleats as shown. The letters H, M, and J correspond to letters in the elevation and in the Table of Dimensions. The form boards should have the same width as the flue lining. See description on Page 10.

Note E—A steel smoke chamber is made by the Donley Brothers Co. and furnished where desired.

Note F—The sectional view opposite shows the rotary control type of Donley Damper. On Page 18 are described poker control and chain control types, also description of materials and full range of sizes.

TABLE OF FIREPLACE DIMENSIONS

FINISHED FIREPLACE OPENING							ROUGH BRICK WORK AND FLUE SIZE									EQUIPMENT						
										NEW FLUE SIZES**				OLD FLUE SIZES								
A	B	C	D	E	F	G	H	I	J	K	L	M	ROUND	K	L	M	HEARTH ASSEMBLIES	DAMPER ROTARY NO.	DAMPER POKER NO.	ASH DUMP	ASH PIT DOOR	STEEL ANGLES* N	STEEL ANGLES* O
24	24	16	11	14	15	8¾	32	20	19	10	8x12		8	11¾	8½x	8½	72	324	224	58	12x8	A-36	A-36
26	24	16	13	14	15	8¾	34	20	21	11	8x12		8	12¾	8½x	8½	72	330	230	58	12x8	A-36	A-36
28	24	16	15	14	15	8¾	36	20	21	12	8x12		10	11½	8½x	13	72	330	230	58	12x8	A-36	A-36
30	29	16	17	14	18	8¾	38	20	24	13	12x12		10	12½	8½x	13	72 OR 84	330	230	58	12x8	A-42	A-36
32	29	16	19	14	21	8¾	40	20	24	14	12x12		10	13½	8½x	13	72 OR 84	333	233	58	12x8	A-42	A-42
36	29	16	23	14	21	8¾	44	20	27	16	12x12		12	15½	13	x13	72 OR 84	336	236	70	12x8	A-48	A-42
40	29	16	27	14	21	8¾	48	20	29	16	12x16		12	17½	13	x13	72 OR 84	342	242	70	12x8	A-48	A-48
42	32	16	29	14	23	8¾	50	20	32	17	16x16		12	18½	13	x13	72 OR 84	342	242	70	12x8	B-54	A-48
48	32	18	33	14	23	8¾	56	22	37	20	16x16		15	21½	13	x13	96	348	248	70	12x8	B-60	B-54
54	37	20	37	16	27	13	68	24	45	26	16x16		15	25	13	x18	96	....	254	70	12x8	B-72	B-60
60	37	22	42	16	27	13	72	27	45	26	16x20		15	27	13	x18	96	....	260	70	12x8	B-72	B-66
60	40	22	42	16	29	13	72	27	45	26	16x20		18	27	18	x18	96	....	260	70	12x8	B-72	B-66
72	40	22	54	16	29	13	84	27	56	32	20x20		18	33	18	x18	SPECIAL	....	272	70	12x8	C-84	C-84
84	40	24	64	20	26	13	96	29	61	36	20x24		20	36	20	x20	SPECIAL	384	284	70	12x8	C-96	C-96
96	40	24	76	20	26	13	108	29	75	42	20x24		22	42	24	x24	SPECIAL	396	296	70	12x8	C-108	C-108

NOTES. *Angle Sizes: A—3x3x3/16, B—3½x3x¼, C—5x3½x5/16.

**New Flue Sizes—Conform to new modular dimensional system. Sizes shown are nominal. Actual size is ½ in. less each dimension.

Note 1—A ruler is a convenience in using this table. Select the number in the left-hand column that corresponds to your proposed width of fireplace opening. Lay the ruler on the line below it and read the figures to the right on the same line. They give you the complete recommended dimensions and installation for the fireplace of the chosen width of opening.

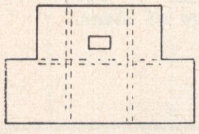
Note 2—Under the heading Equipment, the second and third columns refer to two different types of damper and are, of course, alternates. Rotary control dampers have numbers beginning with 3, poker beginning with figure 2. An order that simply calls for a given size in inches is not sufficiently clear. Order dampers by number.

Note 3—Two sets of flue lining dimensions appear in the table above, one for the old standard sizes and another for the nominal sizes of those conforming to the new, modular standard. Round sizes are also shown. Capacity as indicated by sectional area is presented on Page 10. By "nominal" size is meant actual size plus half an inch for each dimension as joint space. The modular movement, as promoted by the American Standards Association and American Institute of Architects, seeks to reduce all sizes of installed materials to derivatives of a 4-inch module.

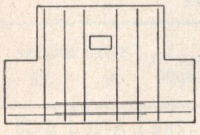
Building a Successful Fireplace, Continued

and masonry settle unevenly—or in case of shrinking or warping of floor timbers.

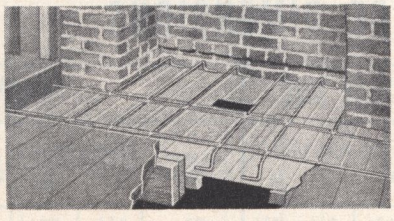
The cantilever principle must be employed in a properly supported hearth and this means a hearth slab of adequate strength. The design calls for a reinforced slab, 3½ inches thick. In helping to make better hearth slab construction convenient to the fireplace builder, the Donley Brothers Co. has developed an assembly of corrugated metal forms and of reinforcing rods, which save time and lend certainty to the operation. Six corrugated metal pans, by overlapping, serve for almost the whole range of hearth sizes.



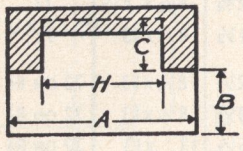
Layout of Pans



Reinforcement Bars



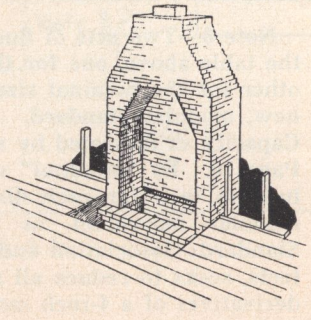
No.	A	B	H	C
72	72″	24″	48″	24″
84	84″	24″	48″	24″
96	96″	24″	72″	24″



Cantilever Hearth Construction — Above are seen arrangement of pans and also of the reinforcing bars. These are bent at each end to give them the correct elevation, also "feet" on which they remain upright during the pouring operation. Since the axis of strain is on the fore-wall of the ash pit, the reinforcing is provided just below the upper surface of the slab. The dimension table is a guide in securing the desired assembly.

The rear of the slab is anchored in a recess in the rear wall. The corbelled fore-wall of the ash pit forms an axis, while the front of the form rests on a temporary strip of wood, nailed to the floor joist header. The slab will, of course, be constructed at a level which permits the finishing hearth of brick, tile or other material to be laid at floor level, or whatever height is desired.

Roughed-in Fireplace— The plans and table of dimensions indicate the relation in size between the rough enclosure and the finished fireplace.



Rough masonry carried to point where flue commences. All is ready for hearth construction.

Smoke Chamber—At damper level, the enclosure narrows to form the smoke chamber. It is important that the slope of its two sides be identical, the flue taking off from the center. Necessary sloping to bring the flue to its place in the stack is accomplished in the flue, not in the smoke chamber. A form consisting of two boards with connecting braces helps to give the brick a proper slope and assists in providing the important smooth surface which assists in discharge of smoke.

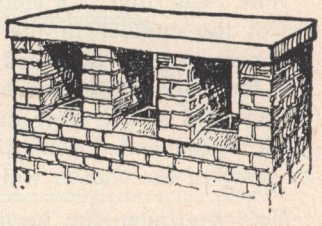
Flue Construction — Important considerations in proper building of a flue are (1) sufficient size, the net flue area being not less than ⅛ the area of the fireplace opening, (2) sufficient height, 25 feet is desirable with projection of not less than 3 feet above the highest point of the roof, (3) smooth, unobstructed passage for products of combustion, and (4) slope, if any, not to exceed 7 inches to the foot.

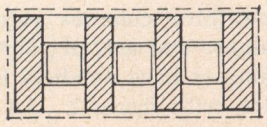
Capacity of Flue Linings

The custom of using flue linings has become almost universal, due to the recommendation of the National Fire Underwriters and building code requirements. Flue lining sizes, shown in the table below, are also printed in the Table of Fireplace Dimensions on the preceding page. Inside sectional figures represent area in square inches.

OLD STANDARD		MODULAR STANDARD		ROUND LININGS	
Outside Dimensions	Inside Section	Nominal Outside Dimensions	Inside Section	Inside Diameter	Inside Section
8½x 8½	52.56	8x12	57	8″	50.26
		8x16	74		
8½x13	80.5			10″	78.54
		12x12	87		
8½x18	109.69	12x16	120	12″	113
13 x13	126.56	16x16	162	15″	176.7
13 x18	182.84	16x20	208		
18 x18	248.06	20x20	262	18″	254.4
		20x24	320	20″	314.1
		24x24	385	22″	380.13
				24″	452.3

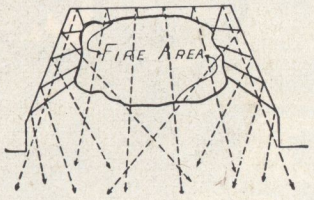
It will be noted that three different methods of measurement are employed for the three types of flue lining —outside measurement for the old standard, "nominal" outside dimensions for the modular standard and the inside diameter for the round linings. Whatever type of lining is used, the sectional areas provide a guide for the desired flue capacity, which should be based on a sectional area not less than one twelfth that of the fireplace opening.

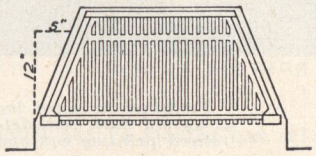




Flue linings should be tightly cemented together. A minimum of four inches of masonry between parallel flues is likewise recommended. Unequal projection of flues above the stack is a safeguard against smoke pouring out of one flue and down the other. Proximity of a tree or high building may be a hazard to free discharge of smoke. Often the remedy is found in hooding as shown on the preceding page.

Interior Construction—A successful fireplace is one in which the fire burns brightly with a maximum of warmth and freedom from discharge of smoke into the room. Every feature of the plans and discussions offered here contributes to this result.



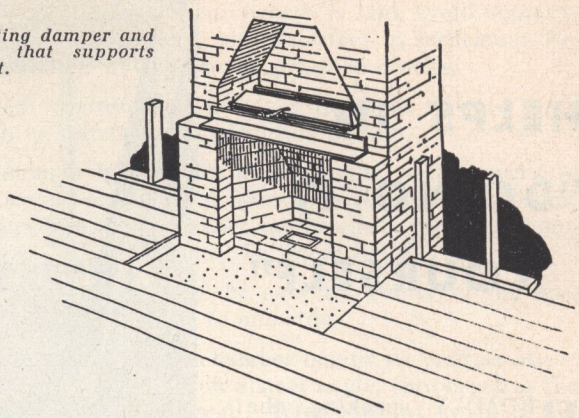


The Hearth Plan—Count Rumford, whose work as a fireplace designer has never been surpassed, conceived the fireplace interior as a sort of reflector. His first measure was to splay the sides and thus narrow the hearth from front to back. Donley plans call for a splay of 5 inches per foot.

Back Is Sloped—The reflector concept is further carried out by sloping the back of the fireplace forward from a point 14 inches above the hearth to the level of the damper as indicated in the drawings. This deflects both flame and heat forward. Products of combustion pass off through the damper, but a maximum of heat is deflected into the room.

Damper Placed Forward—The sloped back contributes to other important design factors. It brings the damper forward of and not directly under the flue and to a position just back of the breast wall of the fireplace. It leaves room for an ample smoke shelf behind the damper. Where the damper has a rear position no smoke shelf is possible. Soot falling down the chimney comes through the damper opening and often into the room. There is no barrier to down-draft and smokiness ensues. The rear position sacrifices much heat. Sloping back, damper well forward and a roomy smoke shelf—all important—all three co-ordinated in Donley designs. None can be sacrificed without impairing the other. The smoke shelf, with the upturned damper plate forming a wall at its front, forms a barrier to down-draft which is trapped and eddies upward in the ascending column of smoke.

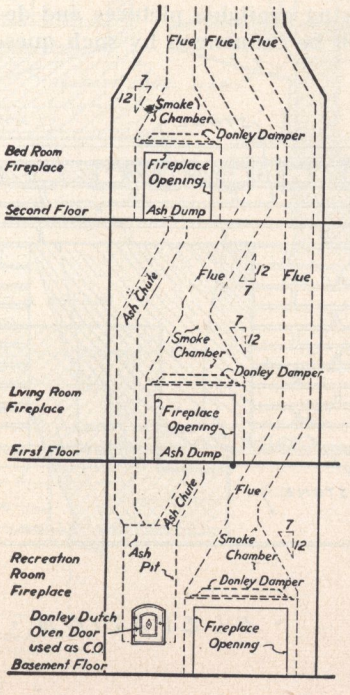
The recommended location of the damper is four to eight inches above the breast wall of the fireplace (which is supported by a stiff steel angle). To sacrifice this breast wall margin in order to support the masonry by a damper flange is to incur risk of issuance of smoke into the room.



Setting damper and angle that supports breast.

Choice of a Damper—The damper should be a co-ordinated part of a properly designed fireplace interior. It should afford a smooth metal throat for the passage of smoke and fumes. A vertical front flange will permit it to rest snugly against the masonry of the fore-wall and a narrow opening (front to rear) will continue the plane of the slope of the back masonry and leave room for a smoke shelf. Its sides should be splayed to conform to the fireplace design. It should be easy to adjust and easy to close during seasons when the fireplace is not in use. The Donley damper was designed with all these objects in view. Choice of a means of control is a matter of preference. Poker control is less conspicuous. Rotary control is simpler to operate.

Fireplaces on 2 or 3 Floors



Often the fireplace that serves a basement recreation room is located below the living room fireplace. Perhaps there is also a bedroom fireplace above, employing the same stack, but each fireplace having separate flues.

The sketch at the left shows the ideal way to combine such fireplaces. Note that each flue takes off properly from the center of the smoke chamber. The slope of the flue in no case impedes the discharge of smoke.

Outlet of the ash pit in a furnished room can be with the Dutch Oven Door.

HELPS IN "DOING IT YOURSELF"

Fireplace in rural lodge, Summit County, Ohio, which is an old barn remodeled by the owner, Oscar Steiner, a retired printing equipment dealer.

BROADLY speaking, the most admired fireplaces are those planned by architects and built by professional builders. But there are localities where such services are not readily available, also cases where it is important to minimize cost. Many enthusiasts seek the thrill of "doing it themselves." Shortage of housing and economic necessity have driven many practical men to undertake construction of their own homes, fireplace and all.

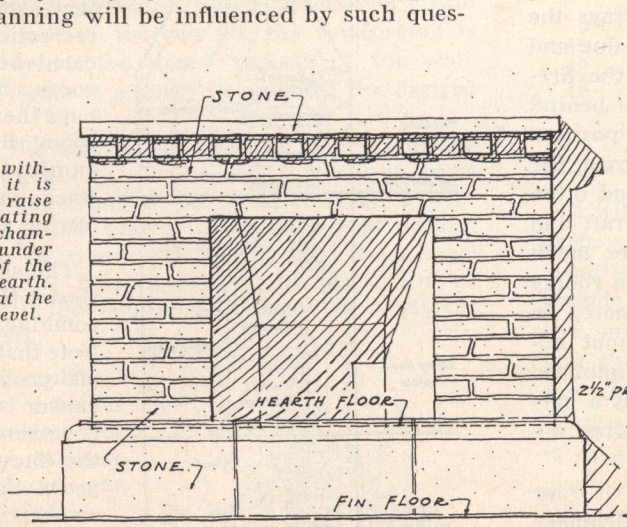
Regard for these cases, and the thought of many stories reaching us of those who have built their own fireplaces after Donley plans, prompts the inclusion of this chapter for the guidance of amateurs.

Study Preceding Chapter — It is assumed that the reader who plans fireplace building has studied the preceding chapter on "Building a Successful Fireplace", also the account, following this chapter, of an actual building of a fireplace by an owner in his summer lodge.

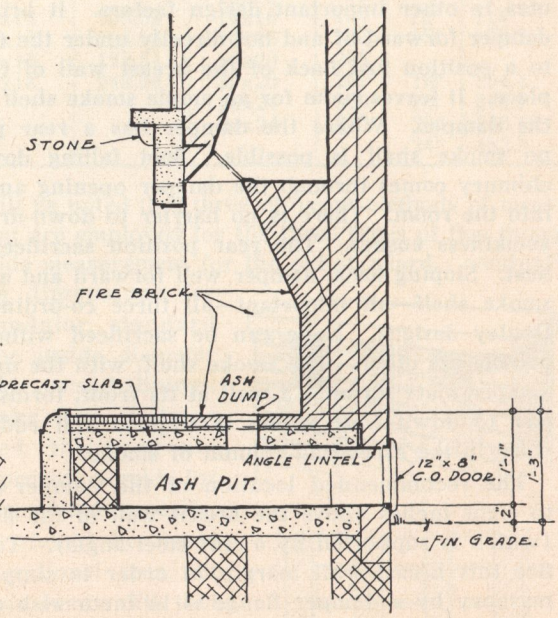
Plan carefully by studying available pictures and designs. Your planning will be influenced by such questions as the type of home, whether built of masonry or wood, whether the fireplace is to be installed in a home already standing or is a part of a new home project. Also, is the fireplace to be built in a home with a basement or without? After answering these questions, adapt your ideas to one of the designs shown, or draw new plans, having due regard to the Table of Dimensions on Page 9.

Materials—Your local building supply dealer will help you to calculate the needed masonry materials.

For the house without a basement, it is often desirable to raise the hearth, creating room for an ash chamber, extending under the whole area of the hearth and fore-hearth. Ash pit door is at the exterior ground level.



• ELEVATION •



• SECTION •

Metal accessories include a damper, two angle lintels, an ash dump, ash pit door and perhaps a spark screen.

Tools needed will be a box for mixing mortar and concrete, shovel, hoe, mason's trowel, mason's level, ball of strong string or twine, and mortar board about 30 inches square.

Footings must be ample to support the heavy mass of fireplace and chimney. They must be below the level at which frost might disturb them. Excavate a space six inches wider all around than the structure you plan. Compact the earth bottom. Pour and level a slab of concrete six inches deep. Give one week to set.

The first course of masonry must be laid with care, since exactness at this point means keeping ensuing courses level and plumb.

Establish corners of your ash pit, by crossed strings, held by small stakes. Bed the first course in mortar. Mortar should be easily worked, yet not so moist that it will not support a brick or withstand some tapping of the brick for leveling and plumbing.

Use string and mason's level in keeping ensuing courses level and plumb.

Check with your mason's level before mortar has set too hard to correct faults.

Ash pit and hearth construction will vary, depending on whether the house has a basement or not. If there is a basement and the hearth is at floor level, follow the Construction Sketch on Page 8. If no basement, follow one of the three designs in this chapter, or the Amateur Fireplace design on Page 17.

With no basement ashes are discharged into a shallow chamber, which may properly extend under the area of the fore-hearth.

In either case, construction of the rough hearth slab may be postponed until the chimney is complete. However, preparation should be made by leaving a recess in the rear brickwork at hearth level. In houses with basements, preparation will include corbelling the fore wall of the ash pit to make a broader support for the cantilevered hearth slab to be built later.

At whatever level your hearth is laid, avoid supporting it by floor timbers, as differences in settlement, between timber and masonry, produce cracks.

Rough enclosure of fireplace proceeds upward from hearth as shown in Construction Sketch.

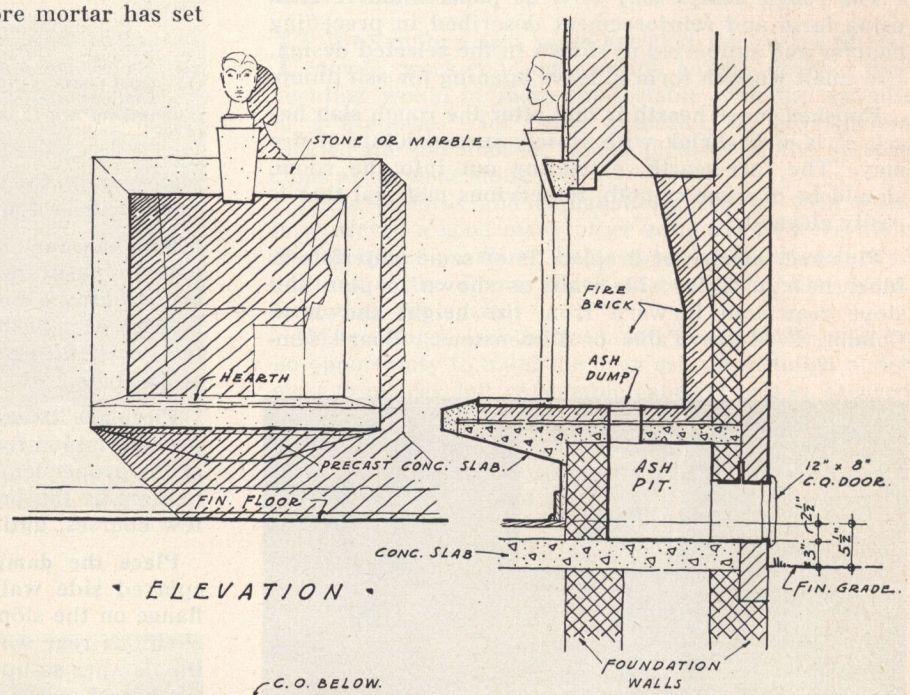
At damper level begin to slope side walls inward to form smoke chamber. A form consisting of two boards, held in place by cleats that can be easily removed when the work is finished, will be found helpful.

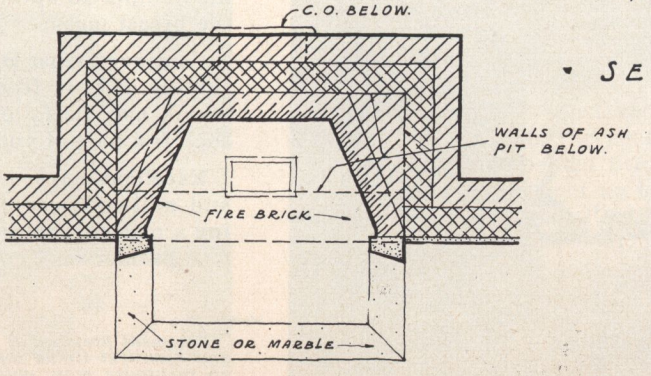
Center of flue should be over the center of the fireplace opening and not to one side.

Front wall of smoke chamber begins six courses above damper level. It rests on a steel angle, supported at the sides by the sloping wall. Wide side of angle is upright and at back.

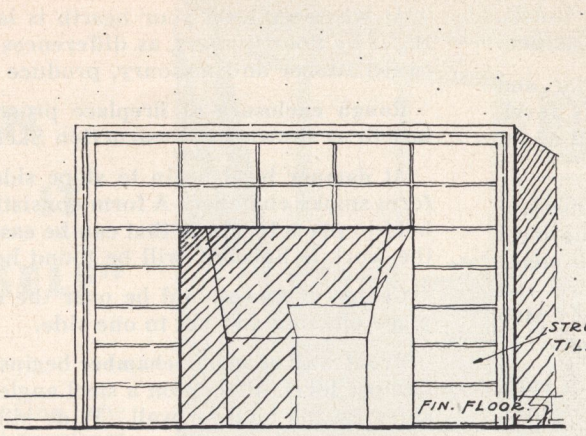
At top of smoke chamber lay a course of brick in position to support flue lining. Inner edges of the brick should correspond with inner dimensions of the lining.

Set first lining unit on this brick support making sure there is no excess mortar to squeeze out and reduce the effective diameter of the flue.

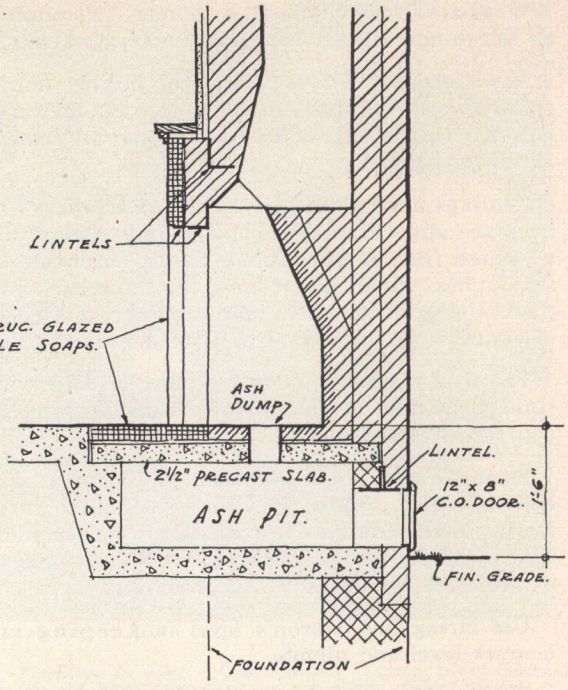




Here is a genuine novelty in the form of a raised hearth that is cantilevered over the floor, with free space beneath, so that rug or carpet is not interrupted by the area of a fore-hearth. This hearth treatment is equally suitable for a house with or without a basement.



• ELEVATION •



• SECTION •

Sometimes a difference between ground level and floor level (perhaps through slope in the lot) makes possible a shallow ash chamber with outside door and without raising hearth above floor level. See also next chapter.

Continue upward with chimney masonry, cementing each successive lining unit to the one below it and using lining as a form for brick or stone masonry. Finish top as described in preceding chapter.

The rough hearth may now be poured and leveled, using form and reinforcement described in preceding chapter and supported as shown in the selected design. Use small wooden form to leave opening for ash dump.

Finished inner hearth is laid after the rough slab has set. It is of firebrick with closely spaced joints of fire clay. The fore-hearth, extending out into the room, should be of some smooth, impervious material that is easily cleaned.

Finished interior of fireplace is of same materials as inner hearth. Splay side walls as shown in plan and slope rear wall forward from the height shown in Column E of the Table of Dimensions. Board templates, cut to the angle of the splay and also of the wall slope, will be found helpful.

Face masonry may now be started, building up each side to meet the firebrick masonry of the interior, also making a neat joint with the walls of the room. In case of a flush fireplace, this will mean a flat contact, or if fireplace is projected, the wall will be met at an angle.

Fireplace Breast—When the sides reach the height predetermined for the top of the opening, a steel angle of the proper length is placed across, from side to side, to support the breast masonry, which is carried up a few courses, until damper height is approached.

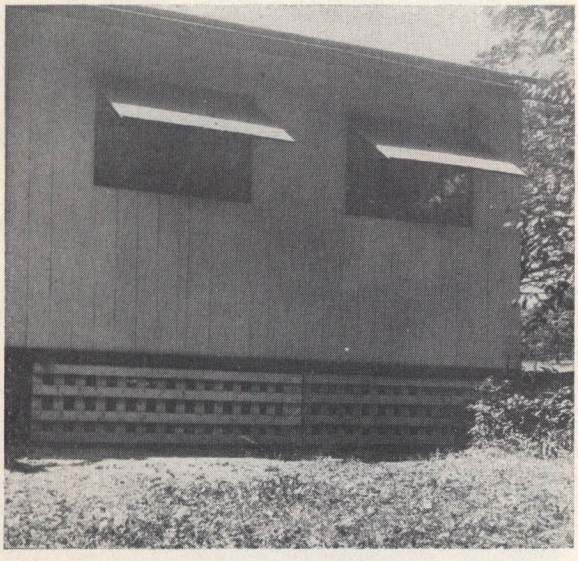
Place the damper with end flanges resting on the splayed side walls of the fireplace interior and rear flange on the sloped rear wall that supports the smoke shelf. If rear wall is properly shaped, this will locate the damper so upturned front flange comes just behind the breast masonry you are building.

Continue breast masonry, filling in between it and the sloping damper front, until finished height is reached, which may be followed by the placing of a mantel if such is a part of your plan.

Excellent stock mantels may be secured from lumber and millwork concerns, that include side jambs, leaving a masonry reveal around the opening. Or the amateur builder may contrive his own.

Basement fireplace of H. E. Fenwick, Independence, Ohio. This and beautiful living room fireplace were built by owner, who is an insurance man, with some aid from a helper, neither being trained in masonry.

HOW AN AMATEUR BUILT THIS FIREPLACE

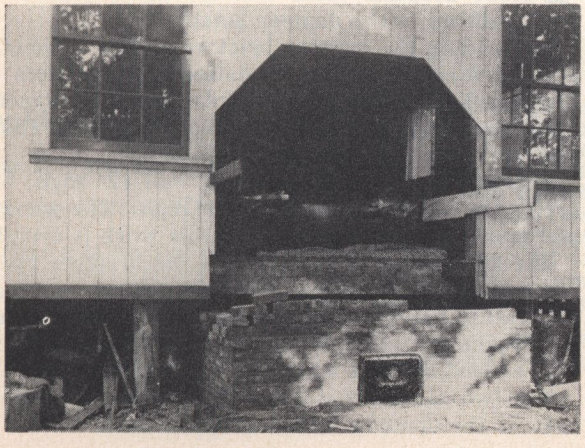


COTTAGE

IT WAS quite a few years ago that the owner of this simple, week-end and vacation cottage decided that evenings would be more comfortable with the warmth of a fireplace. Not being a mason, he nevertheless tackled the job himself, taking pictures of the various steps as he went along.

These pictures and explanations that go with them have served a good many other cottagers to solve their own fireplace problems, being reproduced in successive editions of the Donley Book of Successful Fireplaces. Here they are again.

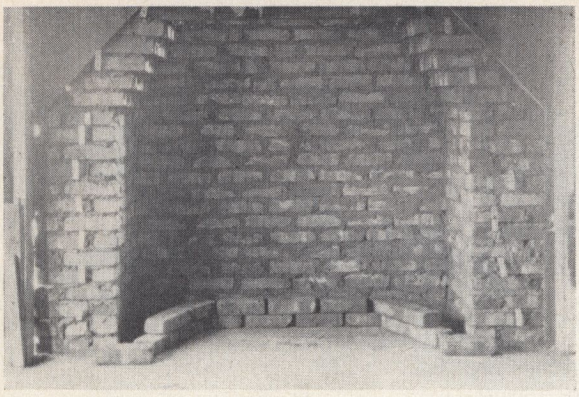
Most cottages lack a basement, hence there will be no opportunity to build the deep ash-pit installed under most fireplaces, but reasonable capacity can be secured by extending the pit forward under the whole area of the fore-hearth. An ash-pit door outside the cottage gives access by which ashes can be raked and shoveled out for any convenient means of disposal.



BEGINNING

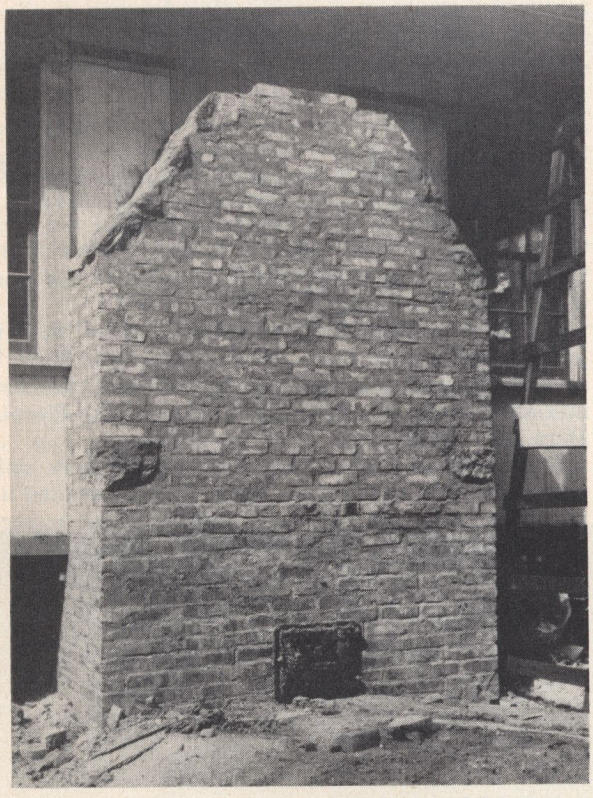
THE first steps included rearranging the windows, cutting an opening in the wall the full size of the roughed-in fireplace; then an opening in the floor extending two feet into the room. Then the area under the hearth was excavated below the frost line and the brick foundation brought up to grade. Earth was then backfilled and compacted to the level of the ash door. The door was placed and brickwork continued, as shown, up to a height four inches below floor level. Here a form and reinforcement are laid and a concrete hearth slab poured, covering the whole area of the ash-pit. The form is of wood. Opening is made in the hearth the correct size for an ash dump.

ROUGHED IN



ON THE hearth slab is laid the rough, outer brickwork of the fireplace, usually made of common brick, while the finished interior is fire brick. In this case, however, both rough and finished masonry was of shale brick, with no detrimental effects. Just above damper height, the brickwork is sloped on each side to form a smoke chamber and also to meet the dimensions of the flue at the top. A simple wooden form is often used, as shown at lower right corner of Page 8, to assure the desired slope for the sides. Note that the picture includes a few brick laid on the hearth to start the construction of the fireplace interior.

EXTERIOR



HERE is the way the outside of the fireplace looked at the same stage of progress, just before the flue was started. The amateur builder has varied his brickwork by inserting larger stones at two points and the slope toward the chimney is likewise varied with smaller units of stone. Irregularities in exterior masonry often lend distinct charm. Particularly in informal construction, such as a cottage fireplace, they are not to be considered inappropriate.

DAMPER

THE lower picture takes us indoors again where the stone fireplace front and the interior brick have been built up to the damper height.

In building the interior brickwork, this builder used a wood form as shown by dotted lines on next page. The wood templet helped in obtaining the correct forward slant of the back wall so that it supports and protects the back flange of the damper.

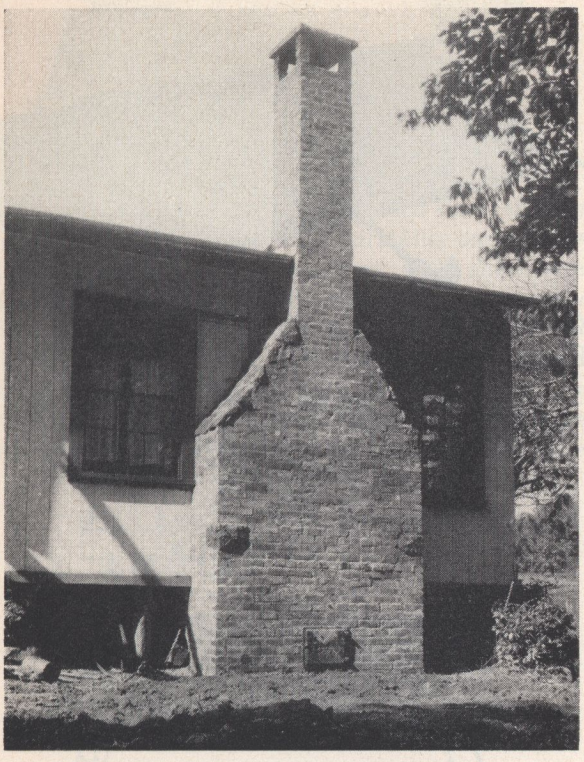
This builder built the vertical wall 12″ high; others prefer the vertical wall 14″ or 16″ high. The wood templet is of course removed when this work is completed.

The first course of stone, above the fireplace opening, has been set in place, supported on a strong steel angle.

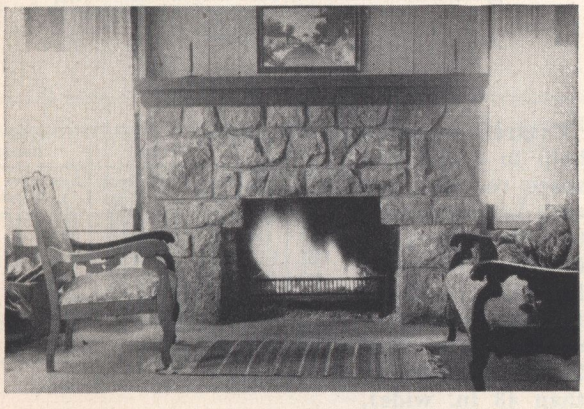
Locating the damper 6 to 8 inches above the top of the fireplace opening as here shown has distinct advantage as compared to when placed level with opening.

The two blocks of stone projecting at the upper corners of the opening were for appearance.

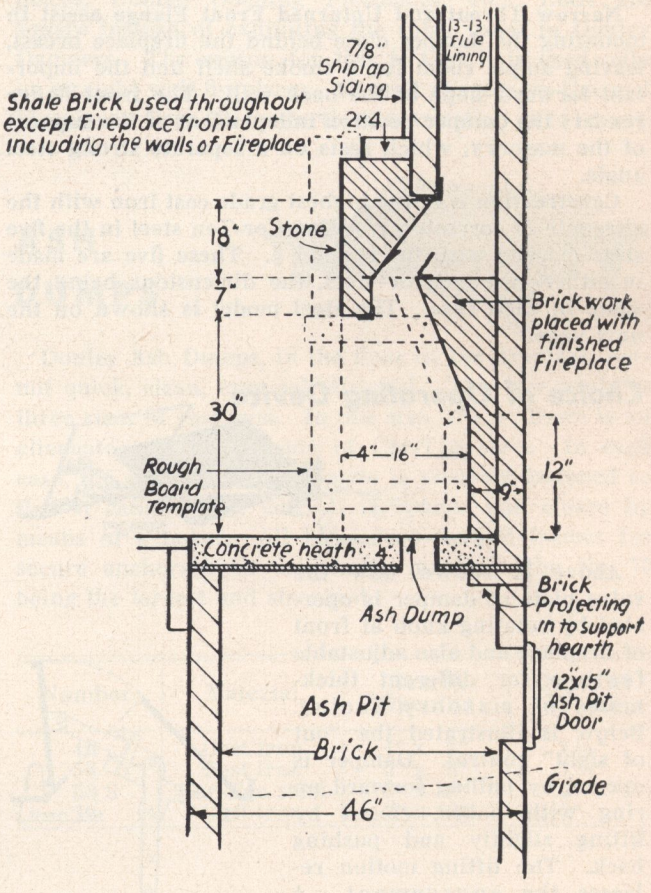
COMPLETE



COMFORT



TWO remaining pictures show the finished job at time of completion. The chimney is built around a flue lining of the 13" x 13" size. The lining rests on a slightly projecting brick ledge. A stone slab at the top of the chimney is supported at the four corners with ample openings for the discharge of smoke. This protects against gusts of wind down the chimney. And, of importance, keeps rain and snow from falling into the fireplace and freezing when the cottage is not occupied in winter weather. Last of all is the plan, which other amateurs may desire to follow.



Thoughts on Doing It Yourself

By the Donley Observer

There's not a thing that I can do
That others can't and better, too.
I quite especially evade
Comparisons with those whose trade
Has been through busy years pursued
And furnishes their livelihood.

But doing things myself is still
A ready road to a pleasant thrill.
For there is something in the doing
That glamor lends to later viewing.
My barbecue looks twice as fit
Since I, myself, constructed it.
And now the shelter that I plan
I would not trust to any man
Knowing my greatest satisfaction
Comes as the fruit of my own action.

So you who like the heft and feel
Of tools well wrought from tempered steel,
Who love the stone of cleavage true,
The brick that lends its ruddy hue,
The wood that sings beneath your saw,
Cement that cures without a flaw—
Get busy, do the job yourself,
Whether it be a needed shelf
Or building a new home entire,
For you and others to admire.

But none will know as well as you
The things you should but didn't do.
So have it plainly understood
You make no claim of being good.

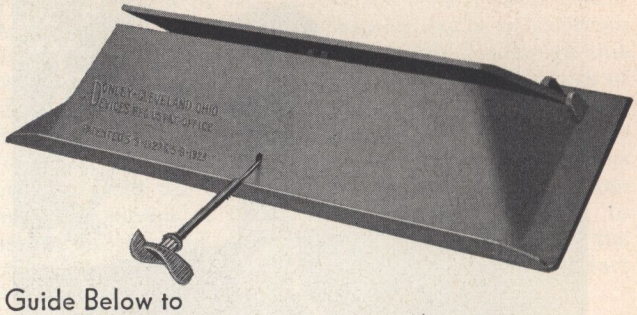
ITEMS USED IN CONSTRUCTION

FIREPLACE DAMPER

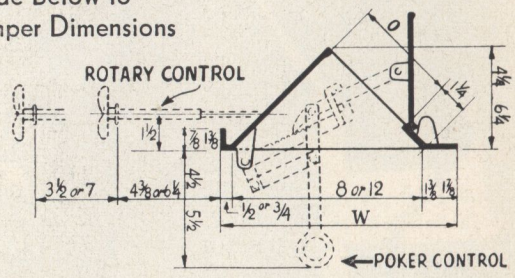
At the right is shown the cast iron Donley Damper with rotary control. There is also a poker control type in cast iron. Chain control dampers in limited number of sizes are now available for those accustomed to their use. They constitute the 400 series in the table below. All Donley Dampers are designed to conform to correct interior construction of a fireplace and built to last as long as the building and to be easily operated. They regulate draft, permit complete closing of the chimney outlet when desired, promote the clean discharge of smoke while maximum heat is delivered.

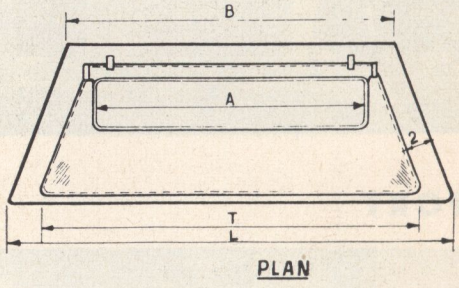
Narrow Throat and **Upturned Front Flange** assist in mounting the damper close behind the fireplace breast, leaving ample room for a smoke shelf and the important forward slope of the back wall. The front flange renders the damper position independent of the support of the masonry, which rests on a separate strong steel angle.

Construction is of the highest grade cast iron with the alternate of corrosion resisting Cor-Ten steel in the five sizes marked with the symbol §. These five are made in either cast iron or steel, the dimensions being the same in each case. The steel model is shown on the next page.



Guide Below to Damper Dimensions





Choice of Operating Device

Above is shown how the valve plate of damper is operated by rotating knob at front of fireplace and also adjustable feature for different thicknesses of masonry facing. Below is illustrated the "out of sight" control. Damper is opened by pulling forward on ring with poker, closed by lifting slightly and pushing back. The lifting motion releases the engagement. A Chain Control Damper is also offered in four sizes.

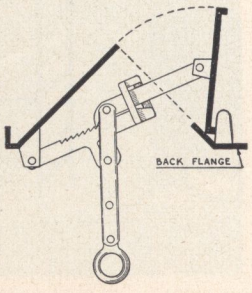


Diagram and table help to calculate space required for each damper. Where two dimensions are indicated on same line, the larger is for dampers in sizes over those of Nos. 248 and 348 (more than 48 in. wide). Both operating devices are shown.

Poker Control No.	Rotary Control No.	Throat Bot. T	Throat Top A	Throat Opng. O	Overall Lgth. L	Overall Bck B	Overall Wdth W
224	321	24	17 5/8	4¼	28½	21	9⅞
230	330	30	23 5/8	4¼	34½	27	9⅞
233	333	33	26 5/8	4¼	37½	30	9⅞
236	336	36	29 5/8	4¼	40½	33	9⅞
242	342	42	35 5/8	4¼	46½	39	9⅞
248	348	48	41 5/8	4¼	52½	45	9⅞
254		54	42½	7	58½	46	14⅝
260		60	49½	7	64½	53	14⅝
272		72	60½	7	76½	64	14⅝
*284	*384	*84	73½	7	88½	77	14⅝
*296	*396	*96	85¾	7	100½	89	14⅝

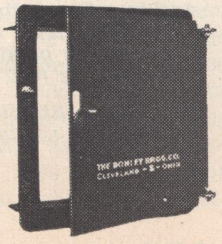
*Two Valve Plates.

Guide to Size and Type of Damper

Type of Damper and Number of Each			For Fireplace Openings With Maximum Width of	Shipping Weight
Poker	Rotary	Chain		
§224	324	...	24″	27½ lbs.
§230	330	430	30″	32 "
§233	333	433	33″	35 "
§236	336	436	36″	38 "
§242	342	442	42″	44 "
§248	348	...	48″	50 "
*254	354	...	54″	95 "
260	360	...	60″	100 "
272	372	...	72″	129 "
*284	*384	...	84″	150 "
*296	*396	...	96″	170 "

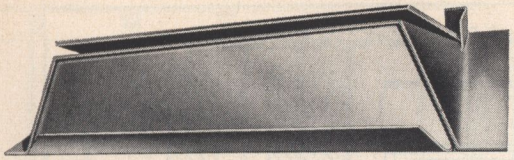
*Two Valve Plates. §Steel or Cast Iron.

Cleanout or Ash Pit Door



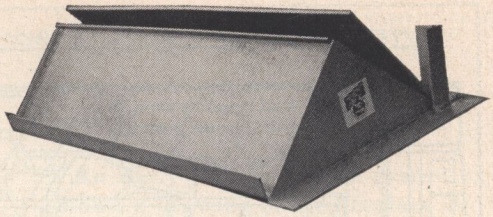
Fabricated from Cor-Ten Steel

This excellent Donley Cleanout Door has a frame welded from heavy steel angles and a door made from a ⅛-inch rust resisting Cor-Ten steel. The frame is 2″ deep to provide support for brickwork and secure anchorage which is increased by perforations. Furnished in sizes 8″ x 8″, 12″ x 8″ and 12″ x 12″. The 12″ x 8″ size, large enough to admit a shovel, is recommended as an ash pit door.



COR-TEN STEEL DAMPER

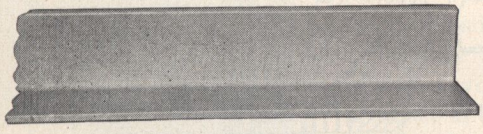
This damper is made of ⅛ and $\frac{3}{16}$-inch Cor-Ten Steel members and is a good damper in durability and serviceability. It should not be confused with sheet steel dampers made and sold for the sake of low price, only. Cor-Ten is a U. S. Steel alloy that gives 4 to 6 times the corrosion resistance of ordinary steel. This damper is made with poker control only and in six sizes, as shown in the table on the preceding page—for maximum width of openings of 24, 30, 33, 36, 42, and 48 inches.



EXTRA CAPACITY DAMPER

This is a special purpose, Cor-Ten Steel Damper with wider throat and squared ends. Its larger capacity fits it for fireplaces with multiple faces, such as Projecting Corner Fireplaces, various types of Three-Way Fireplaces, Double Opening Fireplaces, etc. Ends are square instead of exhibiting the splay usual in Donley Dampers. The reason for this is that it is used only on straight wall fireplaces. Consult chapter on Unusual Fireplaces, Page 22, for further information as to its use.

STEEL ANGLES



Donley Steel Angles are hot rolled, full strength, cut to handy standard lengths, coated with a baked-on good grade of paint. They fulfill a necessity for support of masonry over openings.

Size	Length in Inches	Wt. per Ft. Lbs.
3 x 2 x $\frac{3}{16}$	24, 30, 36, 42, 48, 54	3.07
3 x 3 x $\frac{3}{16}$	24, 30, 36, 40, 42, 44, 48, 54, 60, 66, 72	3.7
3½ x 3 x ¼	24, 30, 36, 40, 42, 44, 48, 54, 60, 66, 72, 78, 84	5.41
5 x 3½ x $\frac{5}{16}$	Cut to order	8.7
6 x 4 x ⅜	Cut to order	12.3

ASH DUMPS

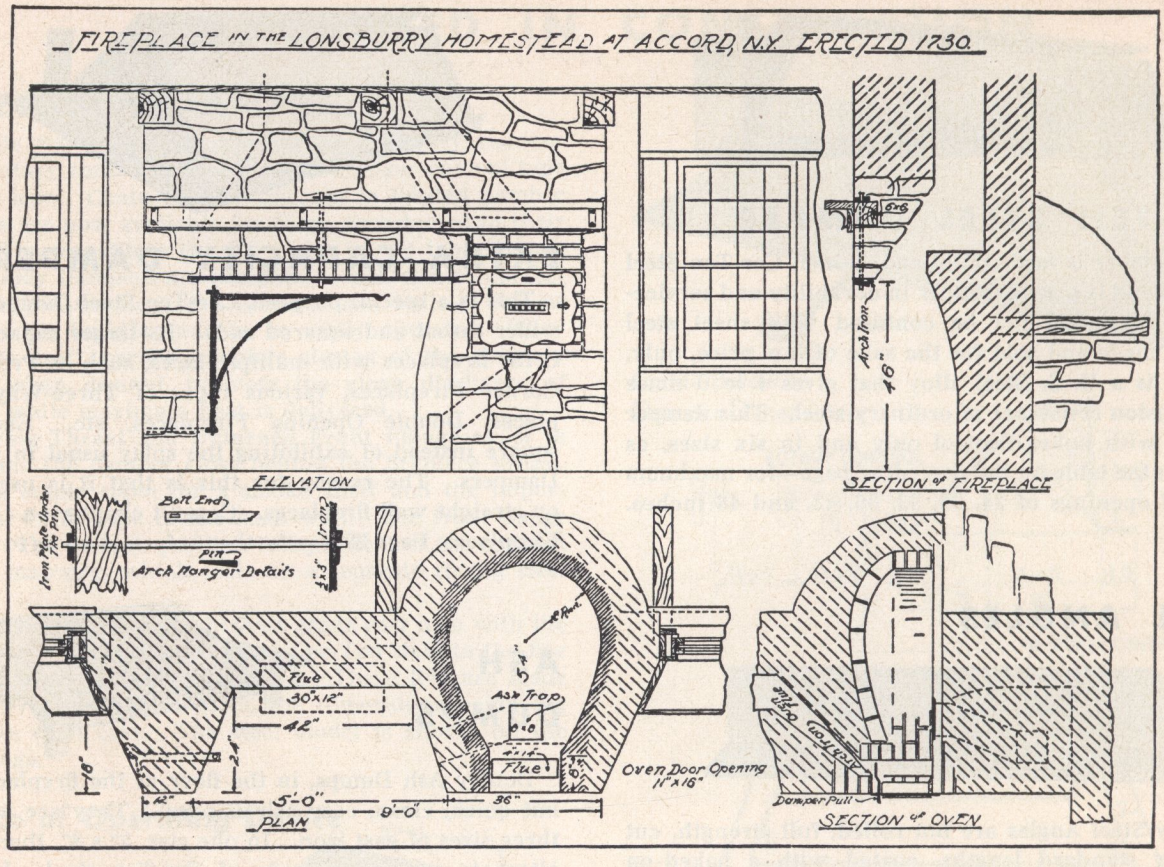
Donley Ash Dumps, in the floor of the fireplace, permit quick, clean, easy ash disposal. They are made in three sizes of cast iron. In one size, 5″ x 8″, there is an alternate ash dump made of Cor-Ten steel. In each case, the pivoted movable plate is securely fastened so that it cannot drop out. It is opened and closed by means of a poker. All have deep flanged frames for secure anchorage in the hearth masonry, the No. 70 being the largest and strongest.

Number	Material	Hearth Opening	Depth of Frame
48	Cast iron	4″ x 8″	1½″
58	Cast iron	5″ x 8″	1½″
58 S	Cor-Ten steel	5″ x 8″	2″
70	Cast iron	7″ x 10″	2″

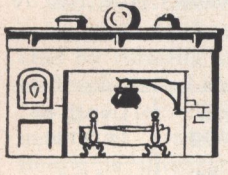
Metrical Blue Print by the Donley Observer

As friend of flame, I do insist
On fires that share my fireside tryst,
The kind that seem to know and care
About the fact that I am there.
A deeply recessed, haughty flame
May look well, but is not the same
As one that bends and bobs to shed
Its warmth on me from toes to head—
That says its friendly how-de-do
Then ducks demurely up the flue.

Unless you wish to waste your stores
Of wood in heating all outdoors,
Be sure your hearth is not too deep,
Your backwall not abruptly steep;
But with an easy slope, designed
To meet a throat set close behind
The forewall at a proper height.
So shall you set the stage aright
For jolly flames, whose gestures fleeting
Reach forth and wave you happy greeting.



THE DUTCH OVEN FIREPLACE

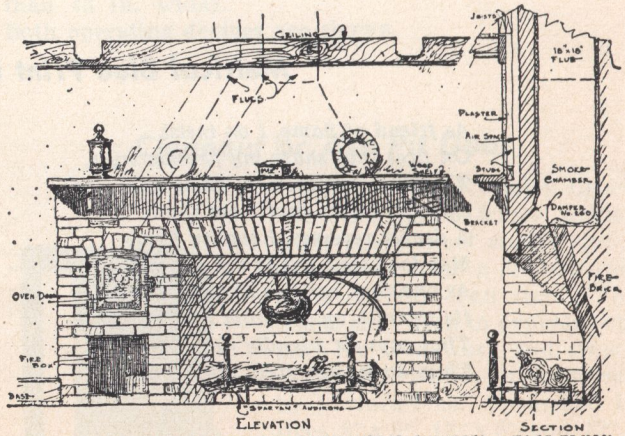


THERE is much confusion in the use of the term Dutch Oven. Dictionaries define it as a metal chamber for baking, placed on the hearth. Such metal ovens survive in portions of the American west. The oven which Count Rumford patented and which sold extensively in the early part of the Nineteenth Century was of this type.

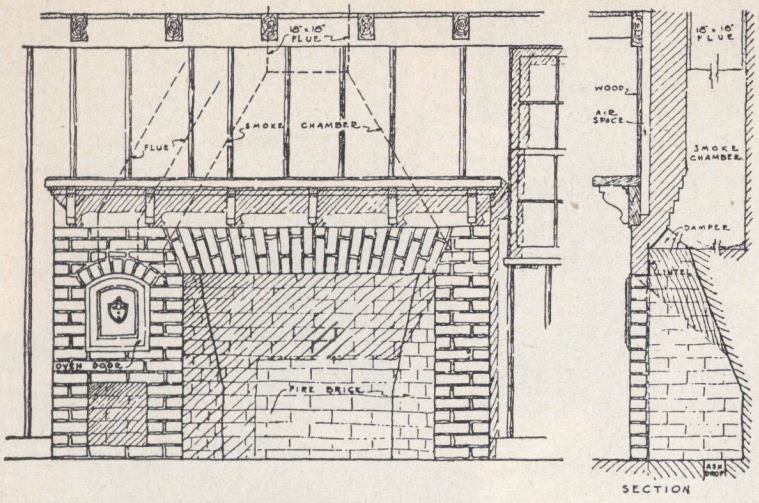
But a more common meaning, in traditions that now survive, is a masonry oven adjoining a fireplace. Probably early English settlers in America found Dutch and German immigrants using an unfamiliar type of oven and gave it that name. In all countries of Europe, baking was pursued in masonry ovens for many centuries. In many cases, the oven was outdoors and operated independently of the fireplace. In rural England it was not uncommon to have such ovens and, likewise, to have a smaller oven adjoining the kitchen fireplace. The former was known simply as "the oven". The latter as "the kitchen oven".

Some people call this a Dutch Oven.

Operation consisted of introducing fire into the oven until it was thoroughly heated and then cleaning the interior. Bread dough was placed on the heated floor of the oven. The convenience of a kitchen oven lay in the fact that embers could be readily shoveled from the hearth of the fireplace into the oven and replaced there when their mission was accomplished. Some form of venting, usually into the main flue, was plainly necessary.



MODERN CONSTRUCTION APPLIED TO EARLY AMERICAN MANTEL - FACE FLUSH

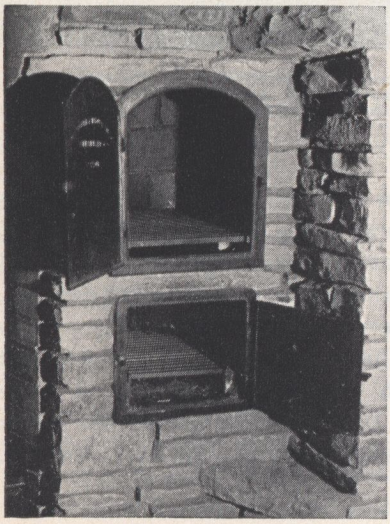


Design at left offers practical suggestions for Dutch Oven Fireplace, the oven being vented into a separate flue, rather than the main fireplace flue.

An Early Model—On the preceding page is shown a drawing of the fireplace and oven in the Lonsburry homestead at Accord, N. Y. Lawrence S. Kier, mason of Cragsmoor, N. Y., who repaired it, calls attention to the iron arch support, suspended by one iron rod anchored in a beam. The capacity of the oval oven is an arresting factor.

"The oven extends outside the main walls of the house," he writes, "and there were at one time on the outside walls (and at either side of the projection) oak beams as shown in the drawing. One of them is still in place and the other is now gone. They were probably used to support a roof over the oven. The stonework was laid up in clay. The bricks were made from local clay and laid in lime mortar."

He tells us that stonework in the room was laid in clay and that a lime skim was applied over the face of the fireplace.

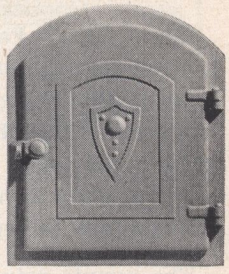


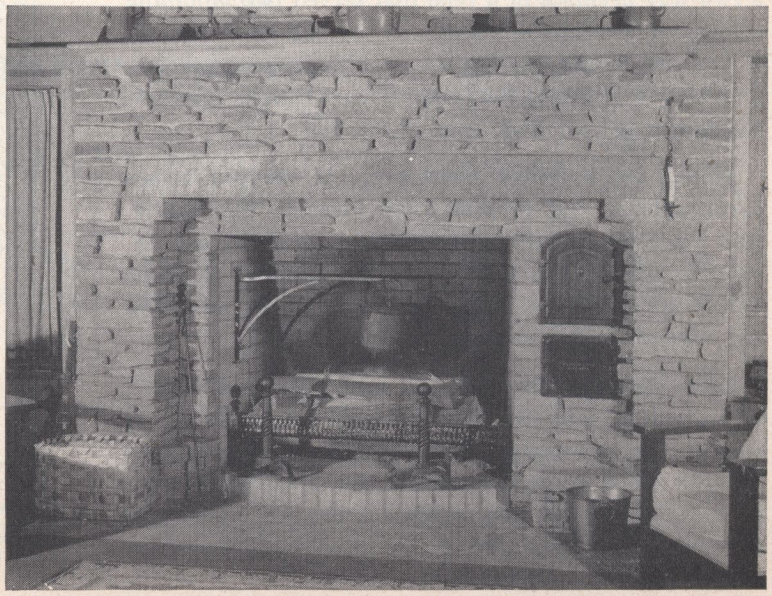
Double type of Dutch Oven with fire chamber below.

The Dutch Oven Today—While this form of baking is rarely practiced, the oven adjoining a fireplace has renewed favor. Its presence at the side of the fireplace gives an authentic touch of quaintness to reproductions of authentic Early American fireplaces. Often its presence is largely ornamental, the recess being used for storage. However, an increasing number of fireplace builders are including actual cooking ovens, both in indoor and outdoor fireplaces. There is a commendable freedom in the means of heating these ovens. Sometimes metal is used to separate the fire from the oven. If the fire is below, the oven may be used for cooking; if it is at the side, the oven is used for warming.

In other instances, a charcoal fire burns during the cooking operation. For such purposes, it is common to introduce a small fire door below the oven door. Instead of a masonry floor, the actual oven has a grid on which cooking or baking utensils are placed. Venting is usually through a small flue communicating with the fireplace flue.

Donley Dutch Oven Door—The Donley Brothers Co. offers aid in Dutch Oven construction in the form of a Dutch Oven Door, pictured here. The design is pleasing either in period or modern setting. Located beside a basement fireplace, it often serves as an ash pit door for fireplaces on floors above, as illustrated on Page 11. Its over-all size is 15 by 18 inches and it fits a wall opening 12½ by 15½ inches in size.



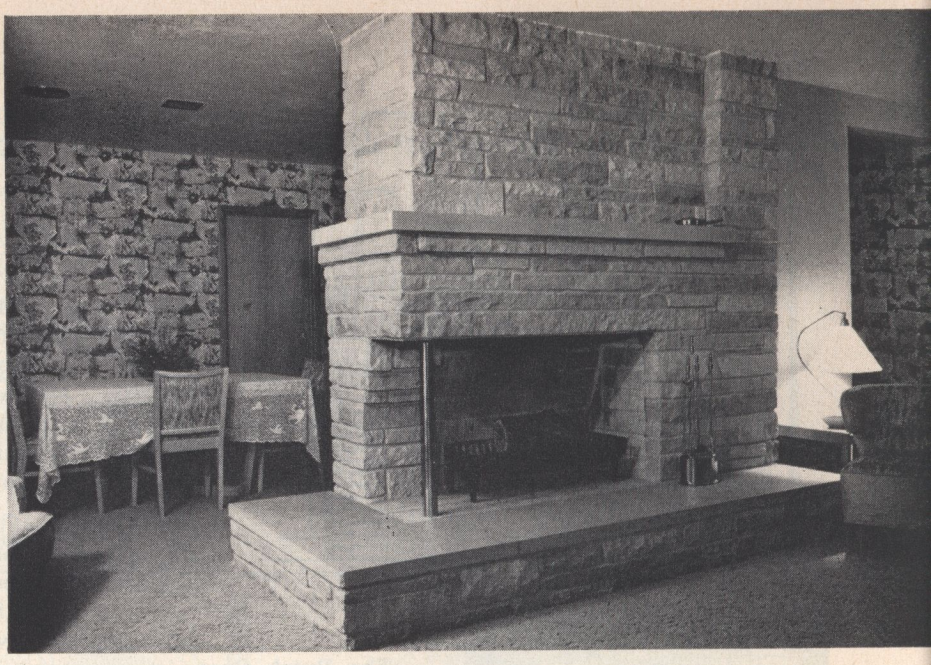


Howard Kiel fireplace, Lake Lucerne, Ohio, with Dutch Oven and crane.

UNUSUAL TYPES OF FIREPLACES

DESIRE for novelty in home interiors has not spared the fireplace. Quite frequently this is expressed in fireplaces having two or more open sides from which the flame may be viewed.

It is such types of fireplaces that will be considered in this chapter. These unusual fireplaces can be built so as to be useful and enjoyable, but they are not exempt from general principles of construction that govern all successful fireplaces.



Projecting Corner Fireplace in the home of B. R. Thomas of Lake Crystal, Minn., designed by Architect Donald R. Olson of Minneapolis and constructed by Fleck & Saffert, masonry contractors.

As with a conventional fireplace, the size of openings should be in proportion to the size of the room. Also, a most important principle is the relationship between the net sectional area of the flue and the area of the fireplace opening. This should be in a proportion of not less than one to twelve.

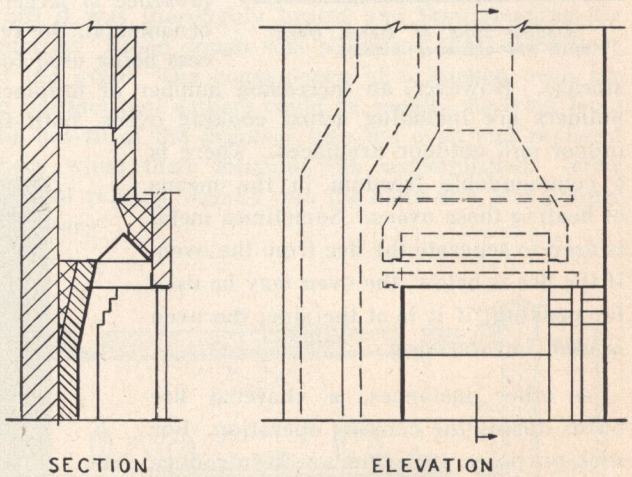
Count Every Face—A Projecting Corner Fireplace has two faces. Hence the calculation of necessary flue capacity should be based on the sum of the area of the two faces. Yet letters reaching the Donley office frequently show that designers and builders have treated the Projecting Corner Fireplace as though it had only a single face, in regard to its flue capacity.

The sample principle must be observed in planning a two-way fireplace of a type that served two adjoining rooms, or perhaps a room and an adjoining alcove. It has two fronts and the areas of two openings must be added to arrive at the factor from which to calculate the proper net sectional area of the flue.

Among the novelties encountered in modern homes are fireplaces that present three faces to the viewer. The potential updraft is proportionately great and experience shows it is best to add the areas of all three faces and divide by twelve to arrive at the minimum net area of the flue section.

Large Capacity Damper—To meet the requirements of any multi-faced fireplace, a damper of ample throat capacity is necessary. Such a damper should have squared ends, since the reasons for splaying damper ends in typical masonry fireplaces are not present in the multi-faced fireplaces we are discussing.

Since the operation of such fireplaces usually calls for unimpeded discharge of the products of combustion, there may be question in some minds as to the need of any damper. Questioners are reminded that dampers, closed in summer, prevent soot from being blown down the chimney. Much heat from a central heating plant may be lost through an open damper. Good sense rejects any fireplace that does not include the means of closing off or regulating the flow of air in the flue.



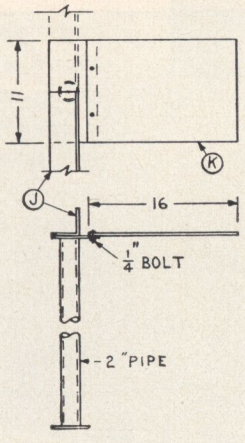
Projecting Corner Fireplace, alternate design supplementing that shown on opposite page.

Projecting Corner Fireplaces

ON this page is our suggestion for a Projecting Corner Fireplace. It has the sloping back wall found in the conventional fireplace. The open end of this fireplace (around the corner from the principal face) has a short wall that affords a measure of protection against the escape of smoke, when subjected to a cross draft.

Corbelling at the top of the short wall extends this protection to the portion of the back that slopes forward and adds to the structural support of the chimney above. This safety feature is but a slight obstruction to the view of the flame.

Two Ways to Build — Frequently it is desired that the facing material be of some material other than brick. In such cases, it is our recommendation to install the rough masonry first. The design on this page indicates such a method and provides for a greater total thickness of wall than when the entire fireplace is built in one operation, as described.



In either case, the hearth may be at floor level, or higher or lower as desired. When the rough masonry is built to the top of the opening, the post, with its 16" by 11" by ¼" lintel plate bolted to the post cap, is placed to support the masonry above. The steel angle supporting the masonry above the opening is also set in place. Then two or three more courses of brick are laid and the damper set in place. It is the extra capacity damper previously referred to. Do not overlook Note A beneath the table of dimensions. Set the steel angle lintel across the front that supports the masonry above the main opening. Continue with masonry as shown in the dimensioned drawings and a successful Corner Fireplace, with wide lateral view of the flame, will result.

Alternate Construction—The design on Page 22 happens to have its short opening at the opposite end. Either design may, of course, be reversed from left to right or vice versa. This design refers to the method of construction by which the entire fireplace is built in one operation.

Donley Design for Projecting Corner Fireplace

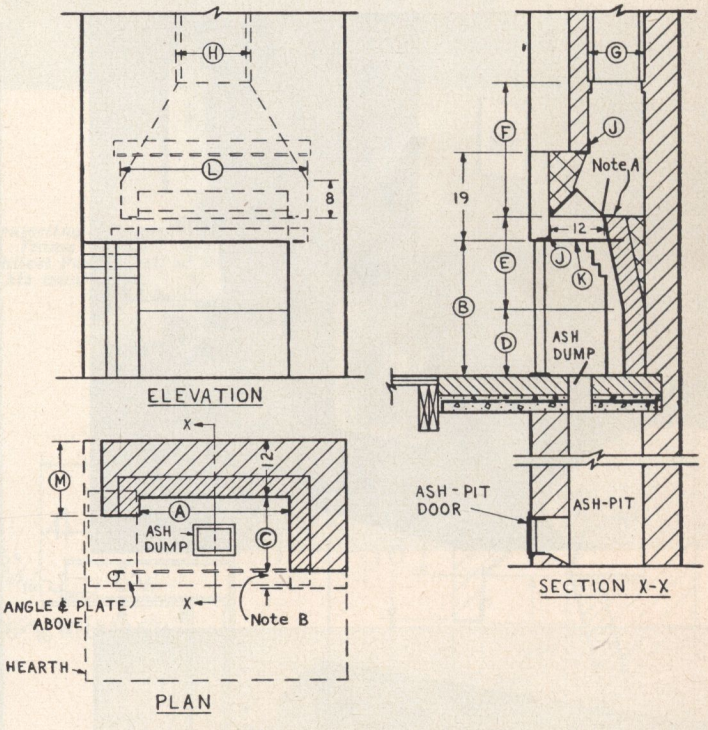


Table of Dimensions and Equipment

A	B	C	D	E	F	Old Flue Size G	Old Flue Size H	New Flue Size G	New Flue Size H	L	M	Damper No.	Ash Dump No.	Ash Pit Door	Angle* (2 required) J	Plate Lintel K	Corner Post Height
32	26½	16	14	20	32	13	13	12	16	40	16	532	70	12 x 8	R-42	11 x 16	26½
36	26½	16	14	20	35	13	13	12	16	44	16	536	70	12 x 8	R-48	11 x 16	26½
40	29	16	14	20	35	13	18	16	16	48	16	540	70	12 x 8	S-54	11 x 16	29
48	29	20	14	24	43	13	18	16	16	56	20	548	70	12 x 8	S-60	11 x 16	29

*Angle Sizes: R—3 x 3 x $\frac{3}{16}$; S—3½ x 3 x ¼.

Note A—The back flange of the damper must be protected from intense heat by being fully supported by the masonry. At the same time, the damper should not be built in solidly at the ends but given freedom to expand with heat.

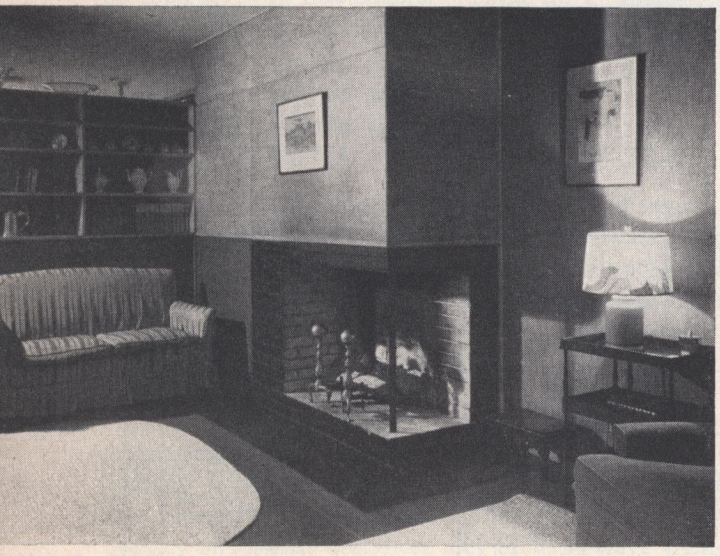
Note B—The drawing indicates the thickness of the brick fireplace front as four inches. However, no definite dimension can be given for this because of the various materials used—marble, stone, etc., all having varying thicknesses.

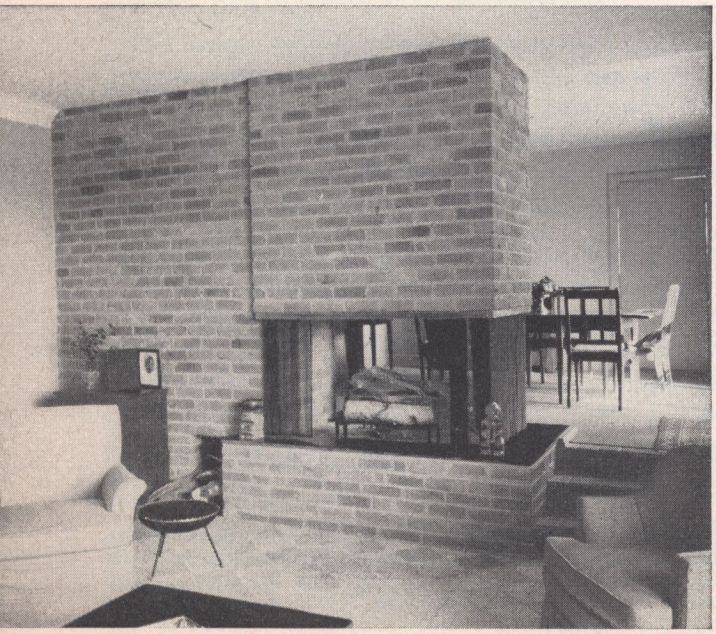
Metal Accessories—These are indicated in the table on the preceding page, together with the measurements for the different sizes of openings. When ordering, it is not necessary to list each item, but merely to write—"All metal parts to build Projecting Corner Fireplace with opening . . . inches wide"—indicating one of the standard sizes of openings listed in the table.

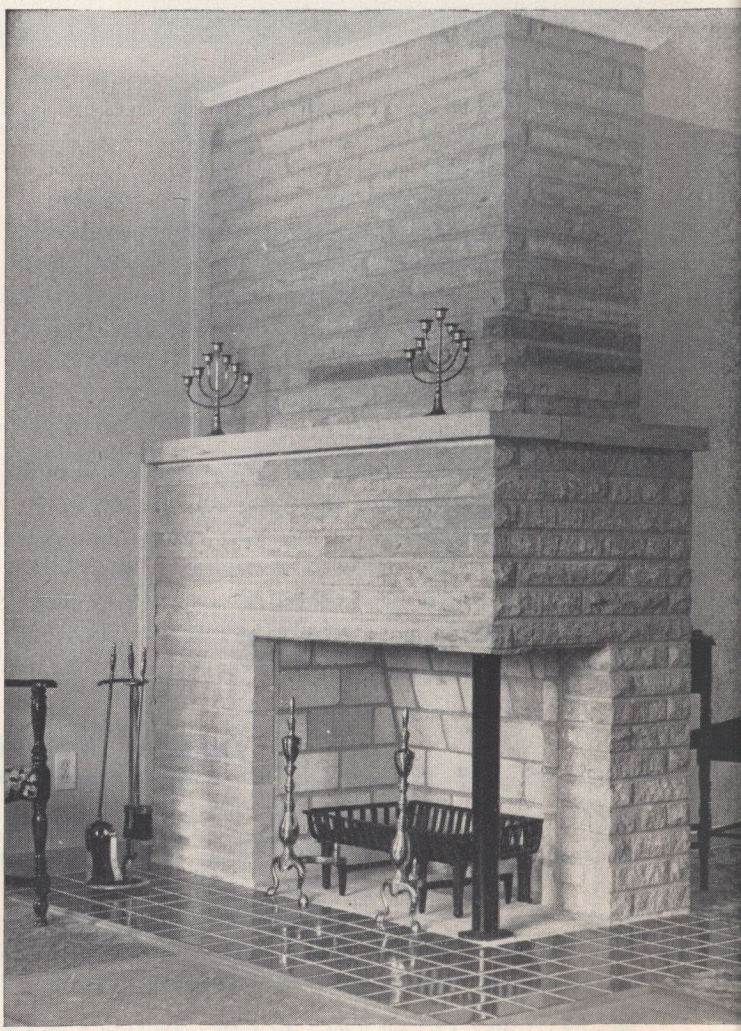
Square End Damper—It would be an error to attempt to build this type of fireplace with a splayed damper, usual in other fireplaces. The Square End Damper, with its extra capacity, as shown in the table, is an important adjunct.

Square End Fire Basket—Similarly, a fire basket, chosen at random, would be awkward in this type of fireplace. The Square End Fire Basket illustrated at the bottom of Page 65 should be the choice for this type of fireplace. And for the Double Opening and the No. 2 type of Three-Way fireplace we supply a basket with a front casting on both sides, for better appearance.

Right or Left Alike—None of the metal accessories listed are restricted to a single position of the corner. Whether your fireplace occupies a corner at your left or right, the same lintels, post and other parts are used.







At the upper left, Projecting Corner Fireplace designed by Architect Eleanor Raymond of Boston for Miss Amelia Peabody of Dover, Mass.

Below at left, Three-Way Fireplace designed by Architects Marcellus Wright & Son for a home in Richmond, Va., and erected by General Contractor O. E. Ziebe. Donley materials furnished by Cruickshanks Iron Works, Richmond, Va.

Above, Projecting Corner Fireplace on Ganyard Road, Akron, Ohio, built by Victory Homes, Inc. Material furnished by Fairlawn Supply & Coal Co.

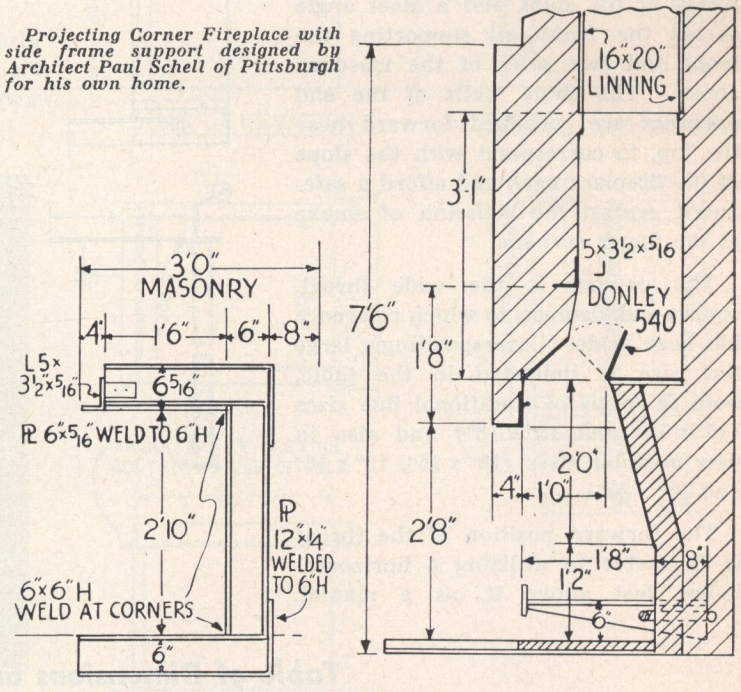
Projecting Corner Fireplace Without Supporting Post

PICTURES and designs of projecting corner fireplaces that lack a corner post will raise a question in the minds of readers. Our recommendation of a post is based on what we regard as safe and economical construction. Any fireplace of this type in which the post is omitted must be specially designed with due regard for all the factors. It is far from our wish to deprecate such practice, providing the fundamental principles of good construction are followed.

Use of Steel Side Frame — Architect Paul Schell of Pittsburgh sends us a photograph and details of a fireplace designed by him for his own home. In it, the post is avoided by using a steel "C" frame. Three 6" x 6" H-members are arc welded at the corners with a 6" flat, welded at the joining, as a reinforcement. The lintel that carries the brick work of the end opening is welded to the under side of the upper member, with sufficient projection to support the masonry. An angle extends across the border front to support the principal breast masonry. The damper is the wide throat type with squared ends, previously recommended. Other lines in the drawing refer to specially designed log rest.

It should be understood that this design comes to us through the courtesy of Architect Schell and is reproduced on account of its undoubted merit. It is not a Donley design and readers who decide to adopt it will have to make their own arrangements for welding of the side frame, log rest and gas igniter. The Donley Brothers Co. can furnish the wide throated damper, the angle support across the principal face, also needed ash dumps and ash pit doors.

Projecting Corner Fireplace with side frame support designed by Architect Paul Schell of Pittsburgh for his own home.



Cantilever Support—In some of the illustrations of projecting corner fireplaces, where no post is shown, the corner is supported on the cantilever principle, which means that one end of a steel member is so strongly anchored, under such a weight of masonry, that the other end, holding the corner masonry, is held firm. The sufficiency of such support depends on the correctness of engineering calculations, and readers are advised, if they prefer such a fireplace, not to undertake it without the aid of proper engineering counsel.

3-Way Fireplace

Type No. 1

THE novelty of a profile view (or side view) of the fireplace flame, such as attracts many people to the Projecting Corner Fireplace, may be enjoyed in interiors where there is no convenient projecting corner.

Here is a design for a fireplace to be located in a side wall, with two short end openings and sufficient projection into the room to allow a side view from both sides. In effect, such a fireplace will bring the fire toward the center of the family circle, with no member shut off, by unfortunate angle, from an agreeable view of the flame.

The drawing reveals the use of two corner posts with supporting lintel plates at the sides and a steel angle across the front—all supporting the front and two sides of the masonry above. The short walls of the end openings are corbelled forward near the top, to correspond with the slope of the fireplace back and afford a safeguard against the emission of smoke at the upper corners.

The damper is the wide throat, square end, damper, to which reference has been made. Correspondingly large flue size is indicated in the table, both in terms of traditional flue sizes (13″ x 13″ and 13″ x 18″) and also in new modular sizes (12″ x 16″, 16″ x 16″ and 16″ x 20″).

The forward position of the throat is favorable to utilizing a horizontal ledge, just above it, as a mantel,

Three-Way Fireplace in home exhibited by Cleveland Chapter of AIA at the 1951 Cleveland Home & Flower Show and later erected in a Cuyahoga County home. Decorations are by Jane L. Hanson, Inc.

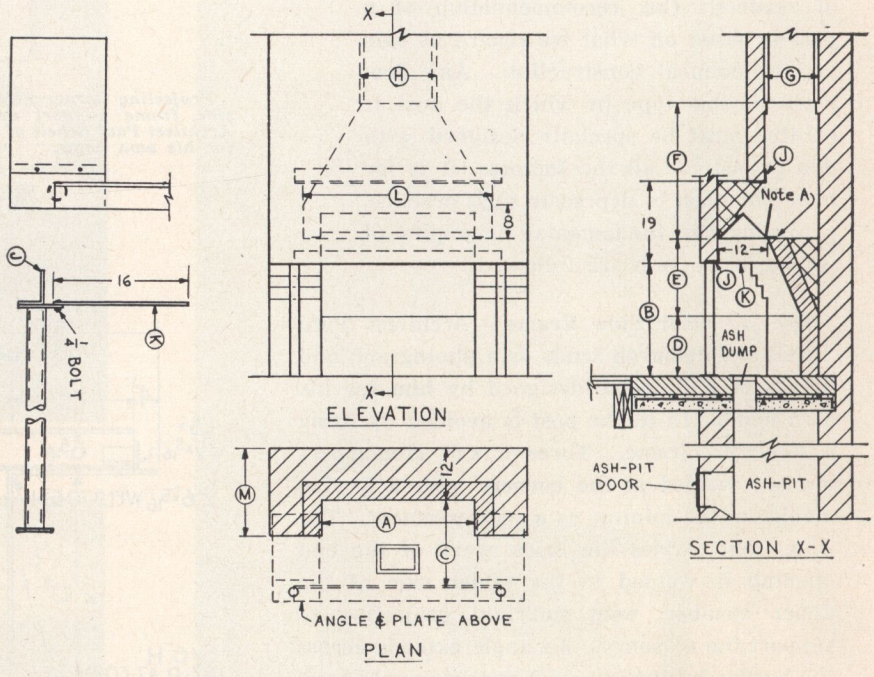


Table of Dimensions and Equipment

A	B	C	D	E	F	Old Flue Size G	Old Flue Size H	New Flue Size G	New Flue Size H	L	M	Damper No.	Ash Pump No.	Ash Pit Door	Angle (2 Required) J	Plate Lintel K	Corner Post Height
28	26½	20	14	18	27	13	13	12	16	36	20	528	58	12 x 8	A-42	11 x 16	26½
32	26½	20	14	18	32	13	13	16	16	40	20	532	58	12 x 8	A-48	11 x 16	26½
36	26½	20	14	18	32	13	18	16	16	44	20	536	58	12 x 8	A-48	11 x 16	26½
40	29	20	14	21	35	13	18	16	16	48	20	540	58	12 x 8	B-54	11 x 16	29
48	29	20	14	21	40	13	18	16	20	56	20	548	58	12 x 8	B-60	11 x 16	29

Note A—The back flange of the damper must be protected from intense heat by being fully supported by the masonry. At the same time, the damper should not be built in solidly at the ends but given freedom to expand with heat. Angle Sizes: A-3 x 3 x 3/16; B-3½ x 3 x ¼.

although the forward wall may be carried directly to the ceiling, if there is a preference for unbroken lines.

Hearth at floor level is indicated, but a slight modification of the design will give an elevated hearth. Such a hearth sometimes has utility in homes lacking a basement, through the opportunity it offers to construct an ash chamber.

Due to its short projection into the room, such a fireplace is well served with a single damper, in contrast with the ensuing type, in which two of the large capacity, square end dampers are employed to insure unimpeded draft and prevent discharge of smoke into the room.

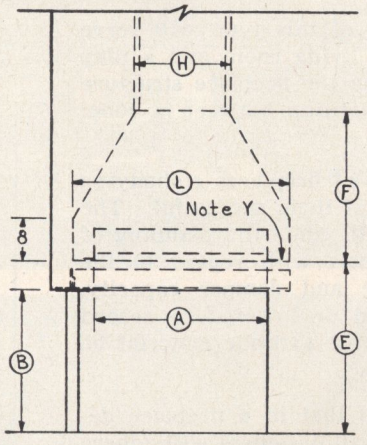
When ordering metal parts, it is not necessary to list each one. Word your order—"Metal Parts for Three-Way Fireplace—Type No. 1, Size ...."—selecting figure from Column A.

Three-Way Fireplace, *Type No. 2*

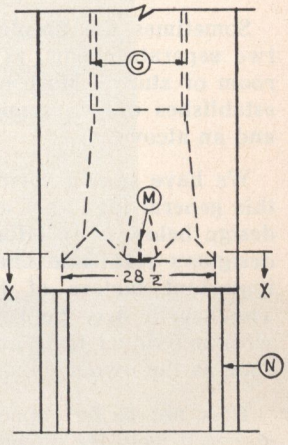
This design originates with Architect Alfred Harris for a Cuyahoga County, Ohio, home. The spacious chimney stack forms a semi-partition, projecting into the living room, with the fireplace at its base. The downward view gives a certain distortion to the picture.

The design indicates a modular 20″ by 20″ flue. Use 18″ by 18″ if only old sizes are available. Two dampers are indicated, their rear flanges resting on two sides of a "T" member, carried across the base of the smoke chamber and supported by the front and rear walls. Corner posts and steel angles support the three sides of the fireplace structure.

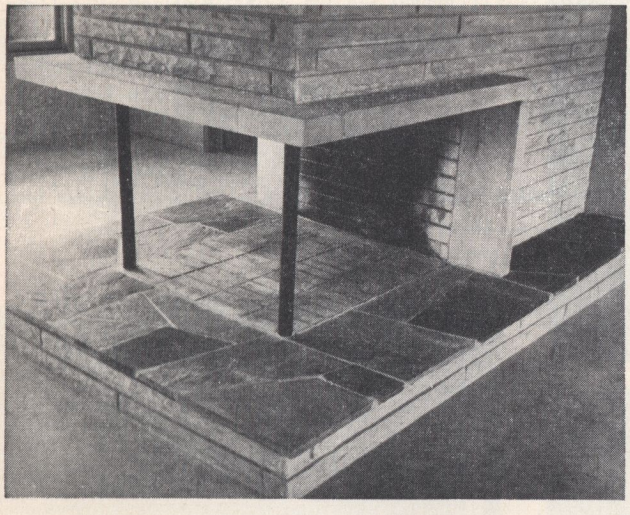
In ordering metal parts, simply ask for "Metal parts of 3-Way Fireplace No. 2, with .... inch opening," selecting your size from one of the two sizes shown in the table.

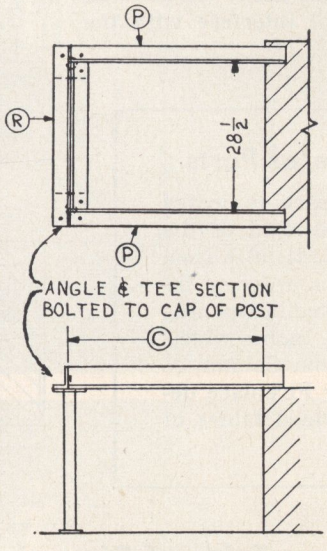


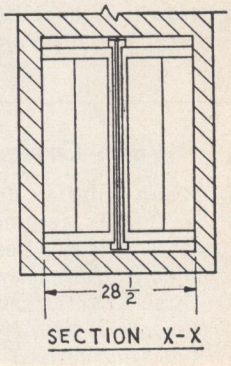
SIDE ELEVATION



FRONT ELEVATION







SECTION X-X

Table of Dimensions and Equipment

A	B	C	E	F	Old Flue Size		New Flue Size		L	Damper No. (2 required)	Steel Tee M	Post Height (2 required) N	Drilled Angle (2 required) P	Special Welded Tee Section R
					G	H	G	H						
28	26½	32	32	24	18	18	16	20	36	528	35	26½	36	34
32	26½	36	32	27	18	18	20	20	40	532	39	26½	40	34
36	26½	40	32	32	18	18	20	20	44	536	43	26½	44	34
40	26½	44	32	35	18	18	20	20	48	540	47	26½	48	34
48	26½	52	32	35	20	20	20	24	56	548	55	26½	56	34

Note Y—The damper and the steel T should not be built in solid at the ends but given freedom to expand with heat.

Double Opening Fireplace

Serving Two Adjoining Rooms

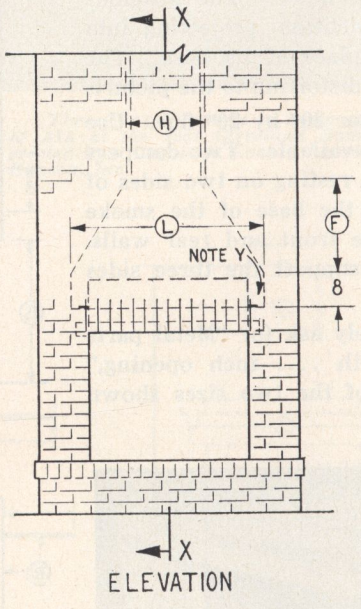
OF late, there has been considerable interest in fireplaces so located that they offer separate fronts to two rooms. Located in a chimney stack that serves as a partition, these Double Opening Fireplaces establish a sort of spiritual bond between the persons and activities on one side of the wall and those on the other. Its practical aspect is that, by building one fire, you cheer and warm two interiors.

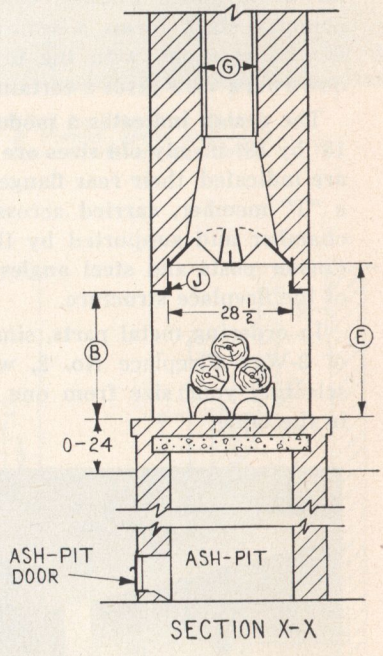
Sometimes the fireplace of this type will serve two separate rooms, as a living room and a play room or study. More often the fireplace structure establishes only a semi-partition between a room and an alcove.

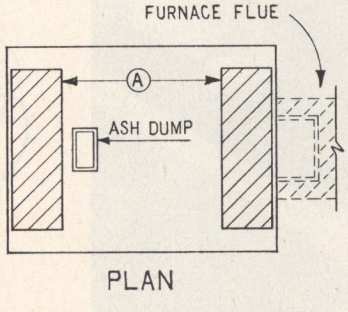
We have seen a variety of fireplaces embodying this general idea—not all of them successful. The design below is an effort to guide the planning of designers into safe channels with regard to the important factors of flue and damper capacity. The hearth may be raised or lowered to accord with individual taste and the exterior material be such as the owner chooses.

It is not to be expected that in a fireplace designed largely for novelty, all designers will adhere to the same lines. In fact the effort seems to be to do something no one else has done. In general, we urge that novelty does not interfere with the working characteristics.

In the design shown, two dampers of extra capacity with squared ends are mounted back to back, with their rear flanges resting on a steel T section, supported at each end by the masonry, but with allowance for expansion and contraction. Five widths of opening, 28, 32, 36, 40 and 48 inches, are indicated. Both the new modular flue sizes are shown and corresponding sizes of the older series. Proper flue size is extremely important to the successful working of this type of fireplace.







For double opening fireplaces there is a special Donley Fire Basket with 2 fronts.

When Ordering Metal Parts

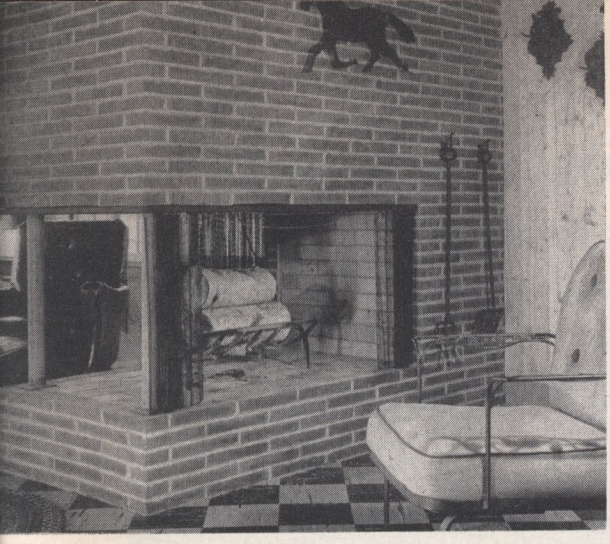
When ordering the metal parts indicated in the six columns at the right of the table, it is not necessary to itemize each article. Simply write your order to include—"Metal parts for Double Opening Fireplace, with openings .. inches wide," selecting desired figure from Column A. This applies to all Donley Fireplace designs, for which are provided tables of dimensions and materials.

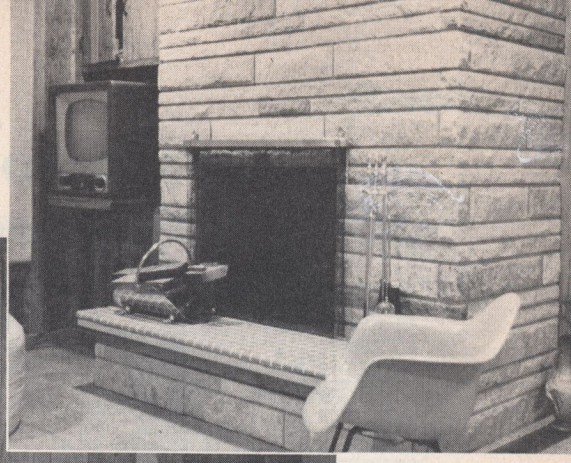
Table of Dimensions and Equipment

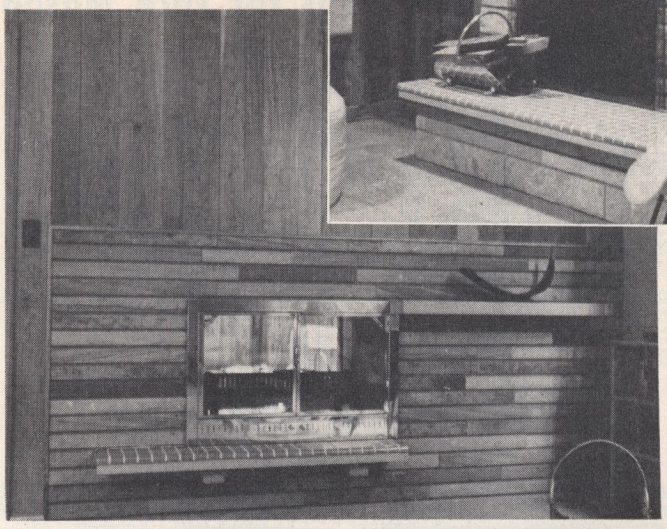
Width of Opening	Height of Opening	Damper Height	Smoke Chamber	Old Flue Size		New Flue Size		Angle (2 req'd)		Tee	Damper (2 req'd)	Ash Dump	Ash Pit Door
A	B	E	F	G	H	G	H	J*	L				
28	24	35	19	13	13	12	16	A-36	36	35	528	58	12 x 8
32	29	35	21	13	18	16	16	A-40	40	39	532	58	12 x 8
36	29	35	21	13	18	16	20	A-42	44	43	536	58	12 x 8
40	29	35	27	18	18	16	20	A-48	48	47	540	58	12 x 8
48	32	37	32	18	18	20	20	B-54	56	55	548	58	12 x 8

*Angle Sizes: A—3 x 3 x $\frac{5}{16}$"; B—3½ x 3 x ¼".

Note Y—The damper and the steel T should not be built in solid at the ends but given freedom to expand with heat.





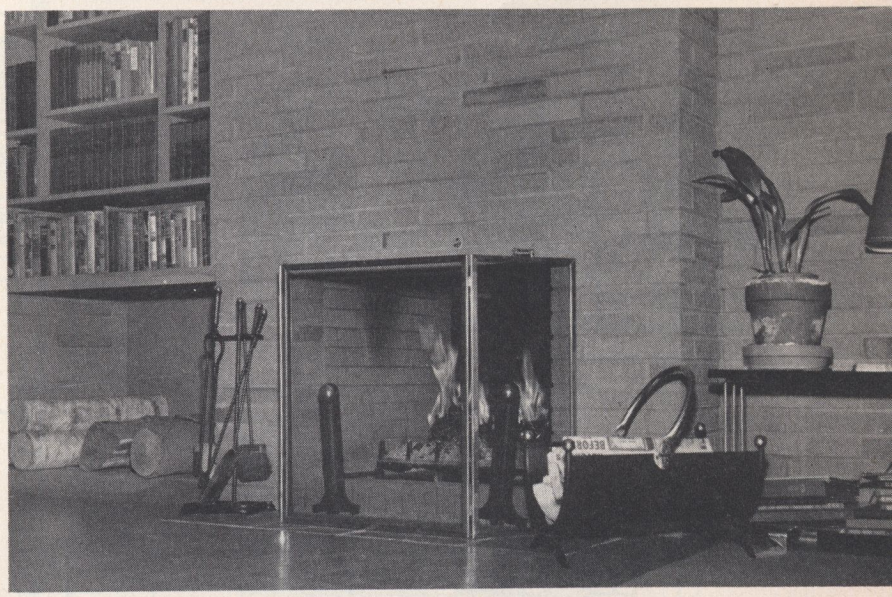


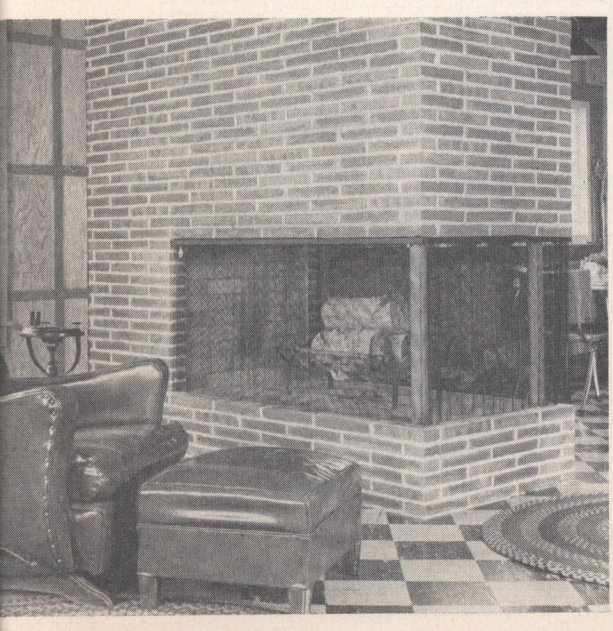
THREE UNUSUAL FIREPLACES

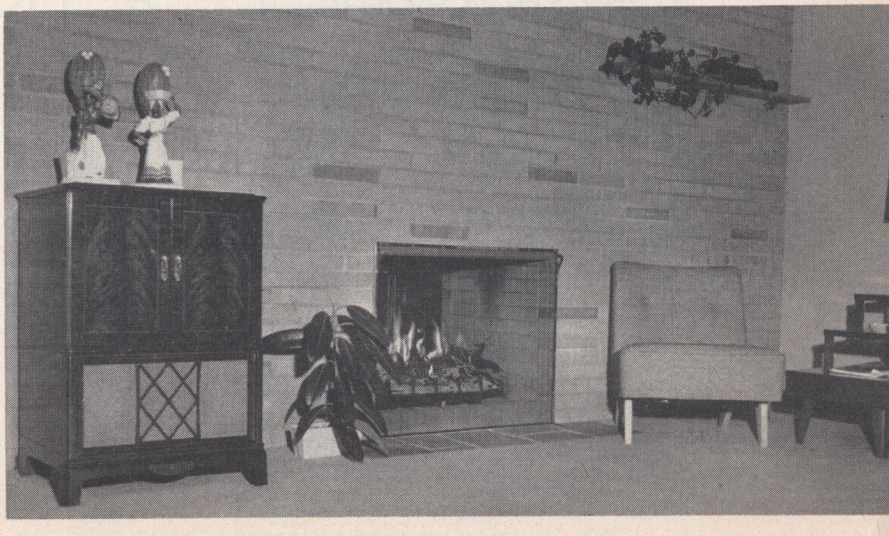
Above and below are two aspects of the Three-Way fireplace in the home of Mr. and Mrs. Wilfred Dulac of Mascoma Lake, Enfield, New Hampshire. Fireplaces such as this perform a "sociability function" similar to that of the Double Opening fireplace, by cheering two separated areas with a single flame. The Densmore Brick Co. of Lebanon, N. H., sends the pictures.

Two views at the upper right show two openings in a fireplace belonging to Raymond Miller of Millersburg, Ohio. It is the work of builder Roy A. Mast, who credits Donley planning, but has shown commendable originality in the treatment of raised fore-hearth. One is solidly supported by tile-faced masonry and the other, with the intriguing off-center effect, has cantilever support.

The two views shown at the lower right represent the two openings of a Columbus, Ohio, fireplace, designed by its owner, Fred C. Mackey, of 2766 Redding Road. It looks through from the functional interior of an 18 by 27-foot living room, into a combined dining and rumpus room, 18 by 22 feet in size.

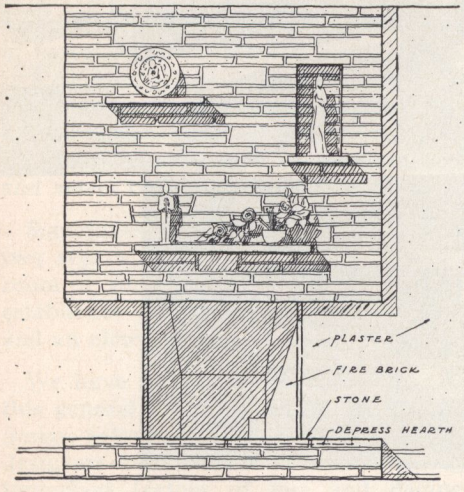






PORTFOLIO OF FIREPLACE DESIGNS

Suggestions for Face Masonry Treatments



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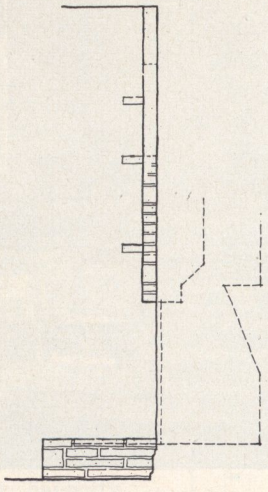

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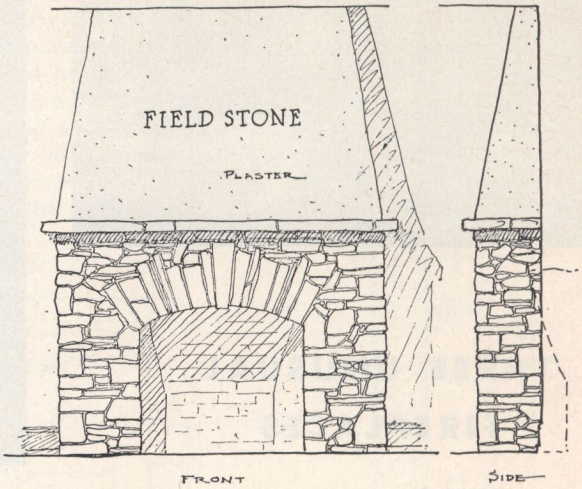

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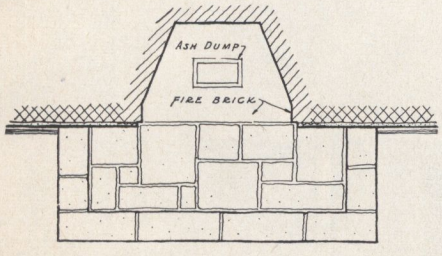

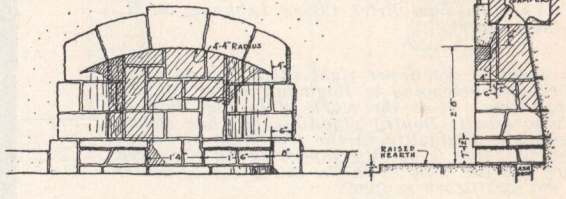

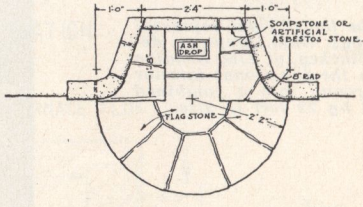

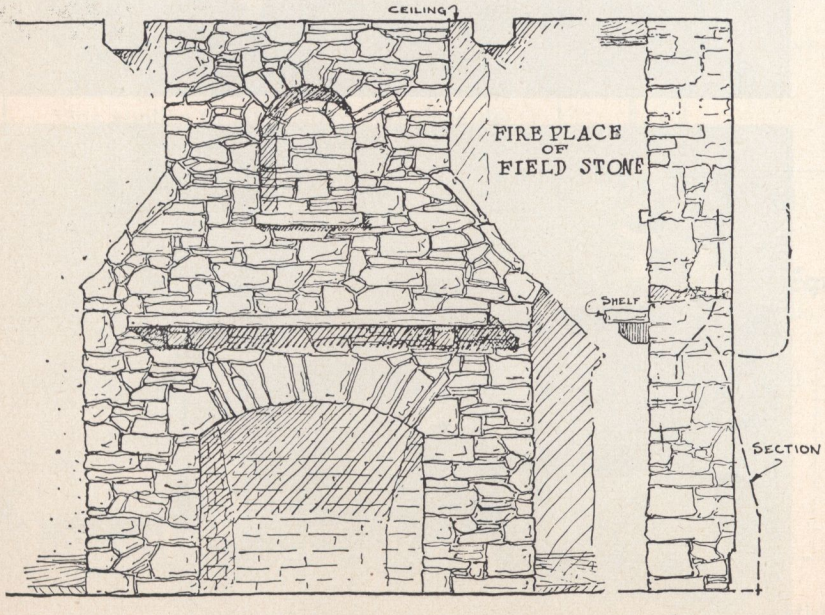

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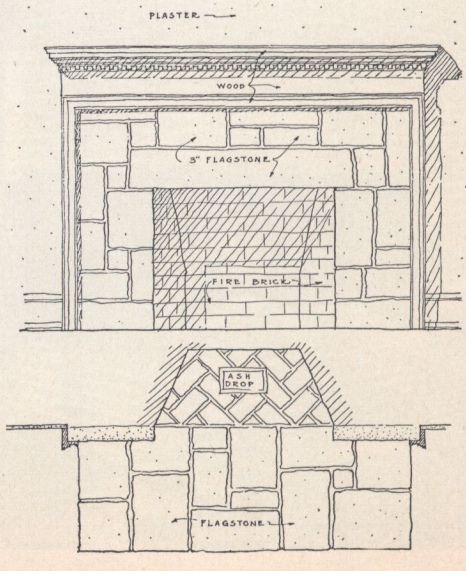
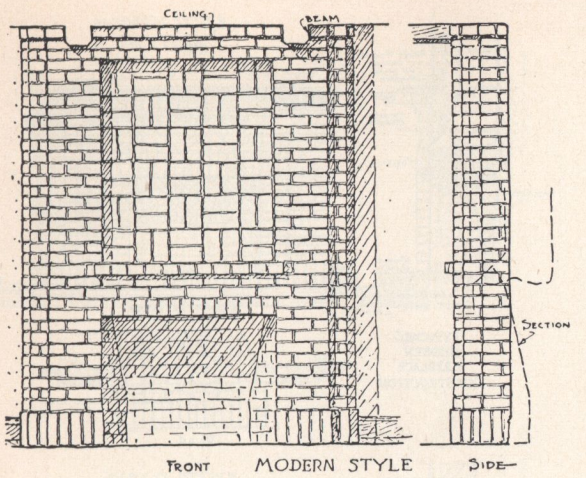
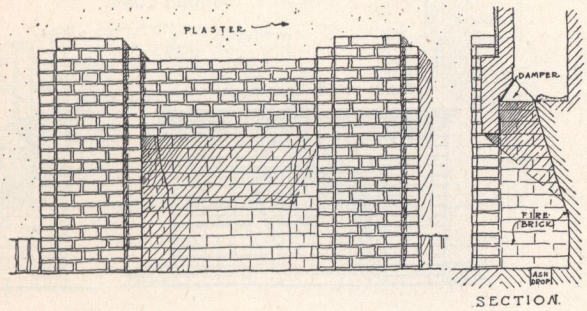
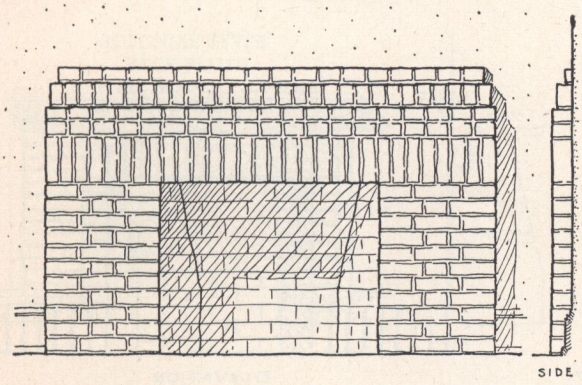
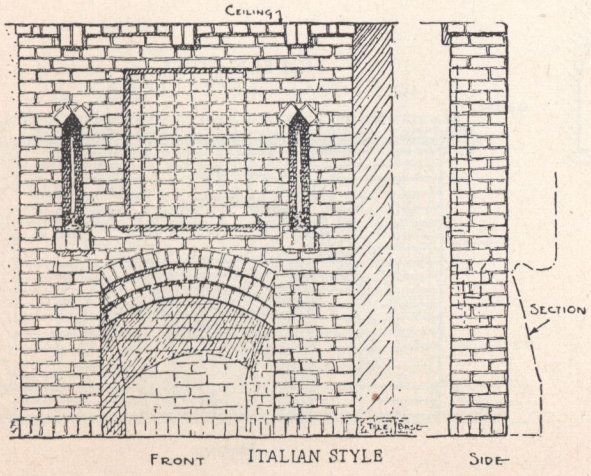


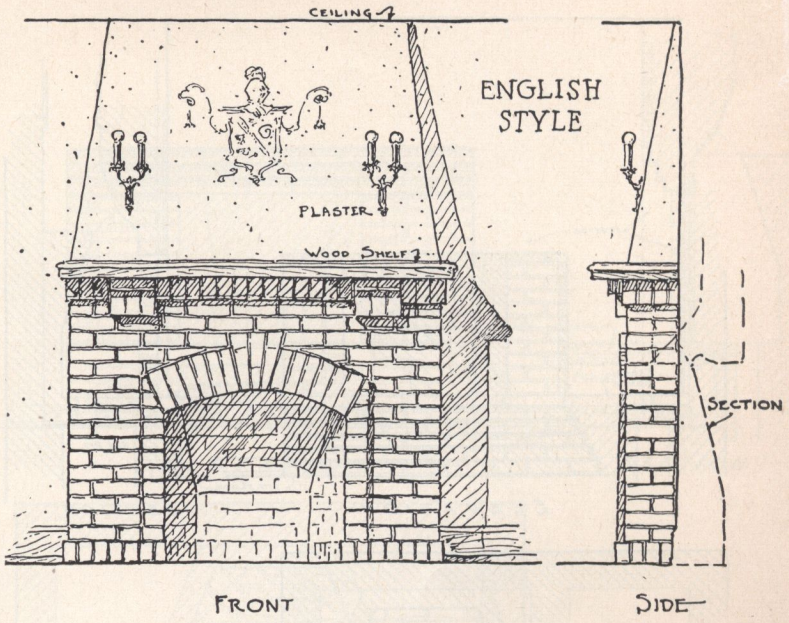
PORTFOLIO OF FIREPLACE DESIGNS

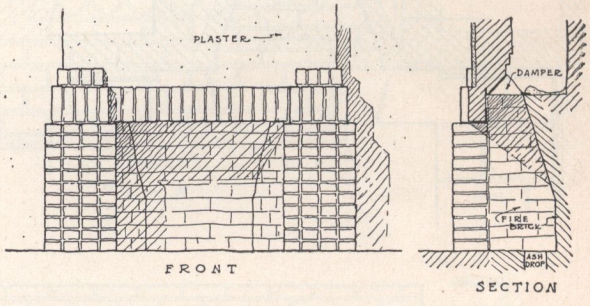


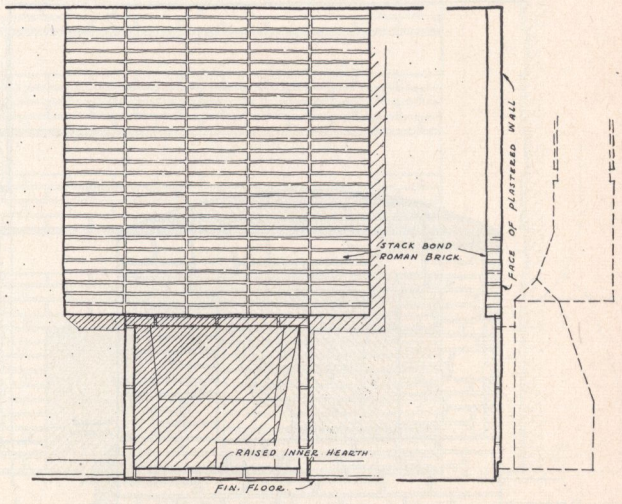


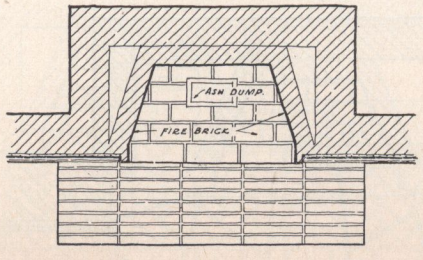






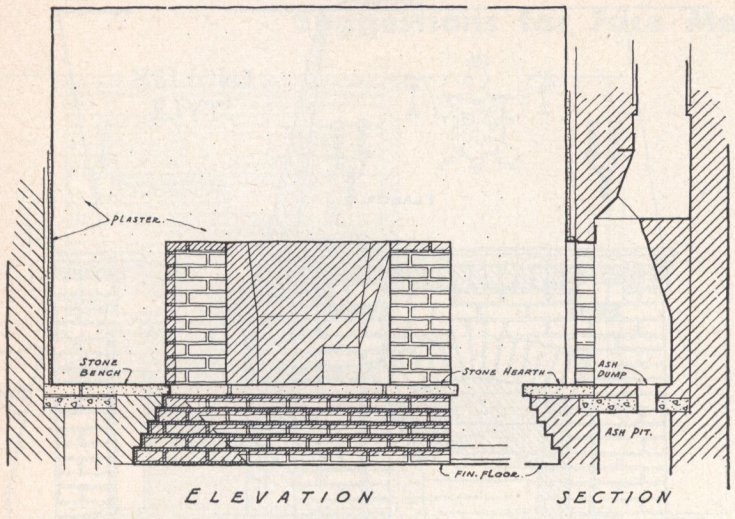


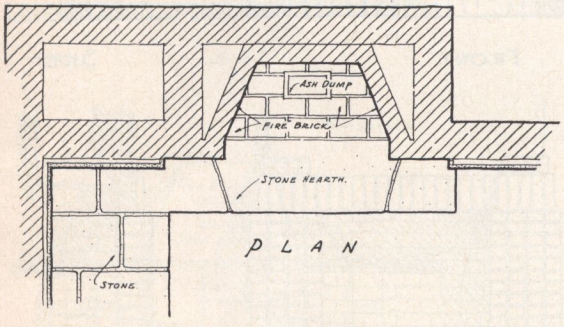


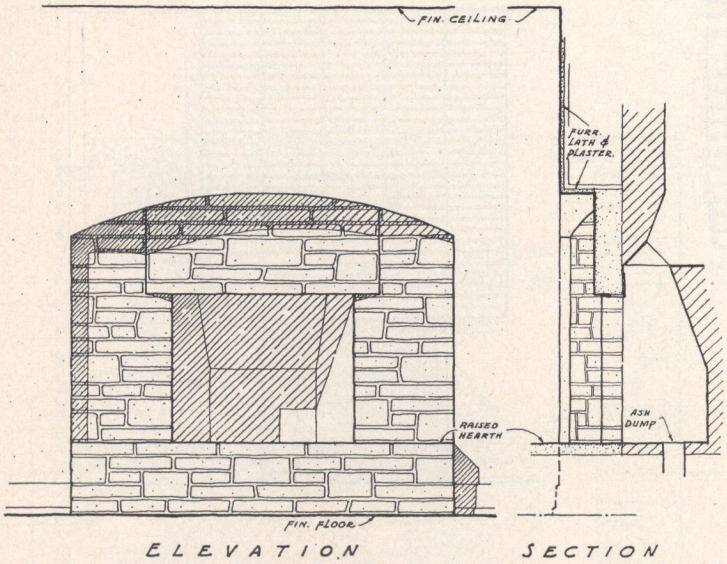


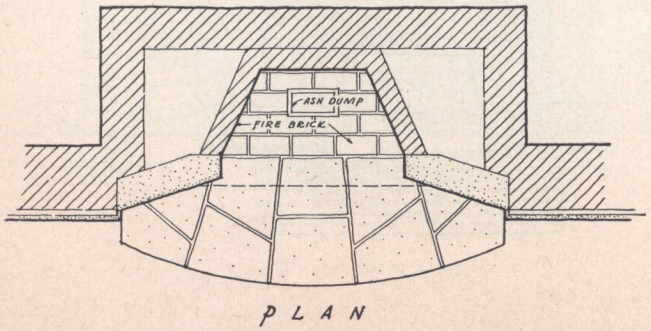
SUCCESSFUL FIREPLACES

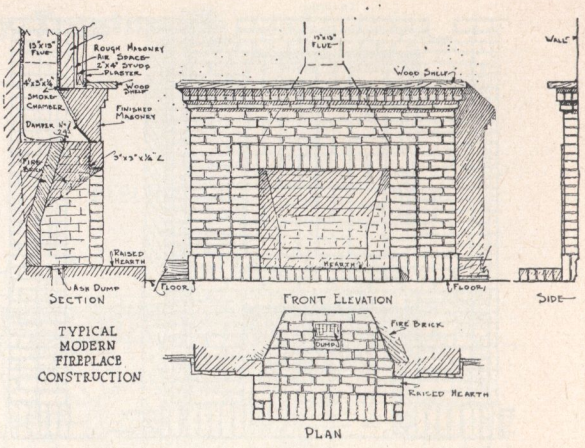
PORTFOLIO OF FIREPLACE DESIGNS

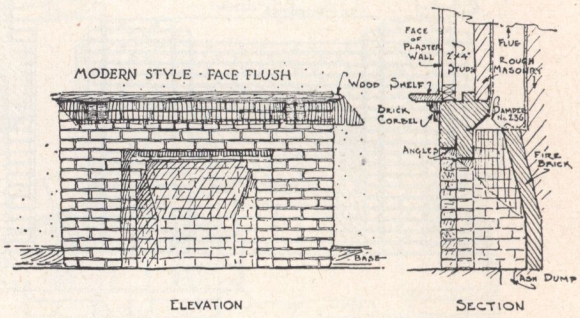


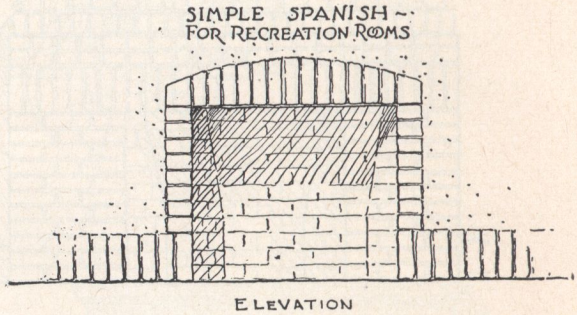


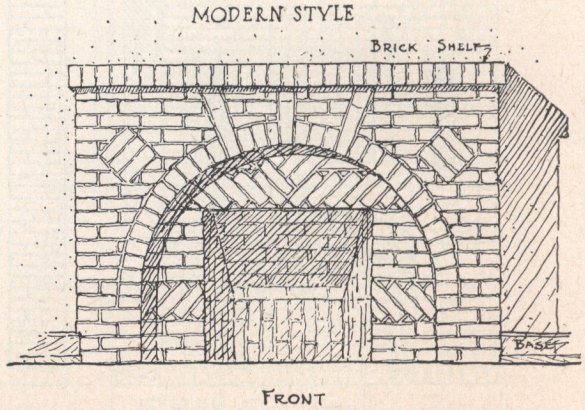






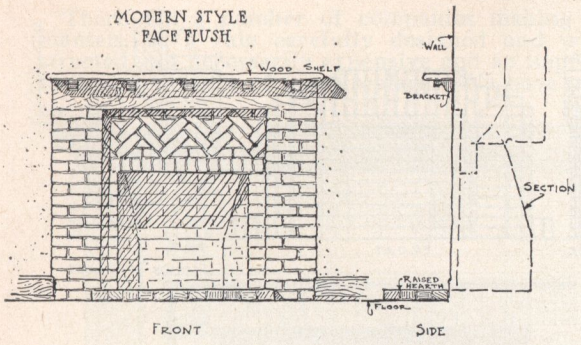


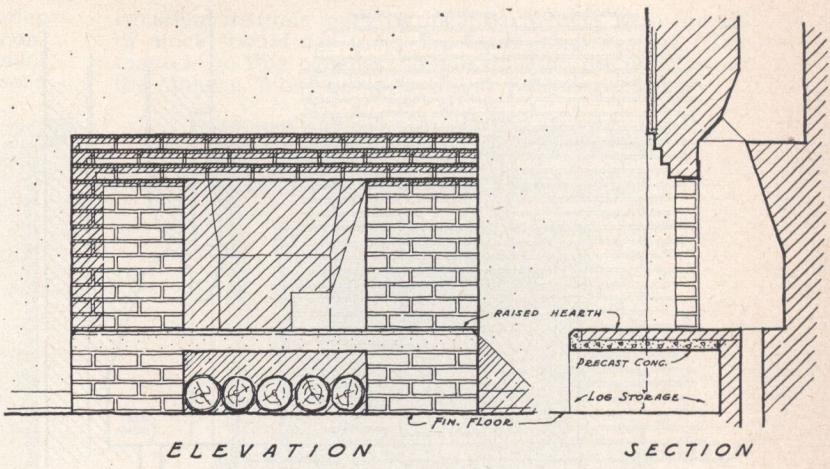


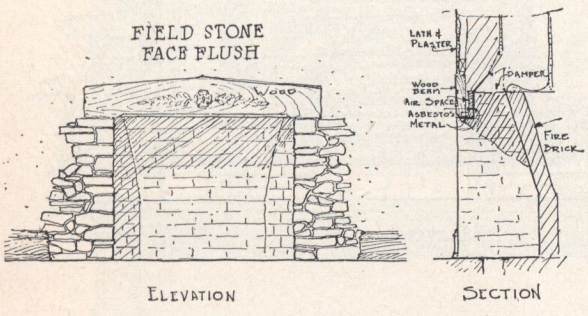


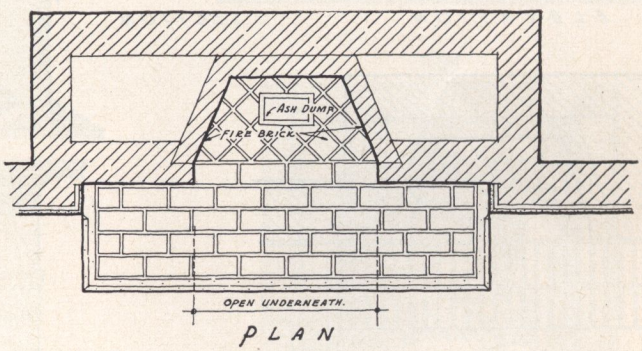
THE DONLEY BOOK OF

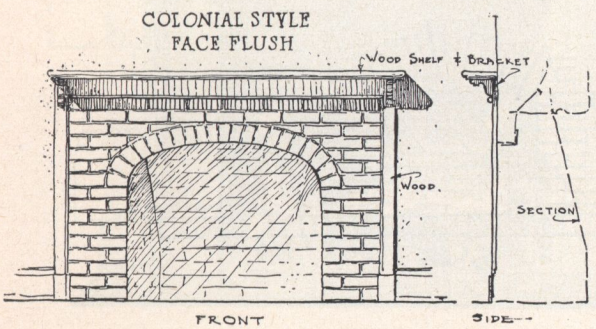
PORTFOLIO OF FIREPLACE DESIGNS

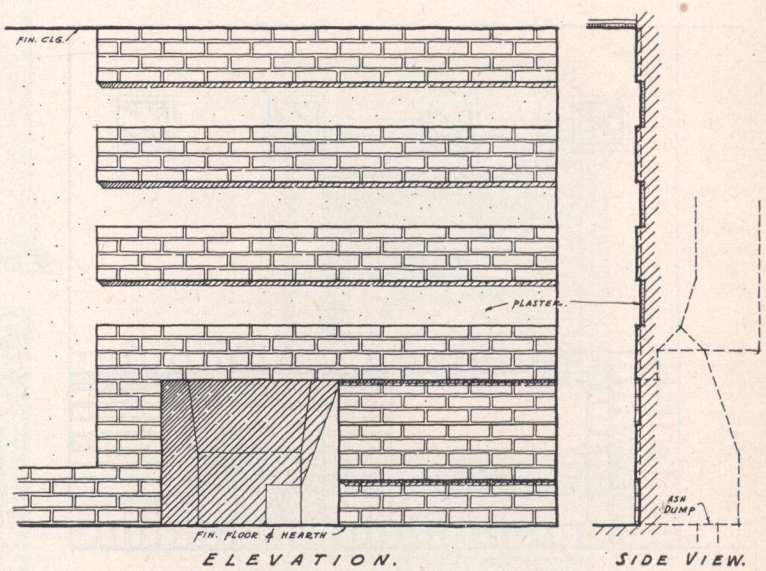


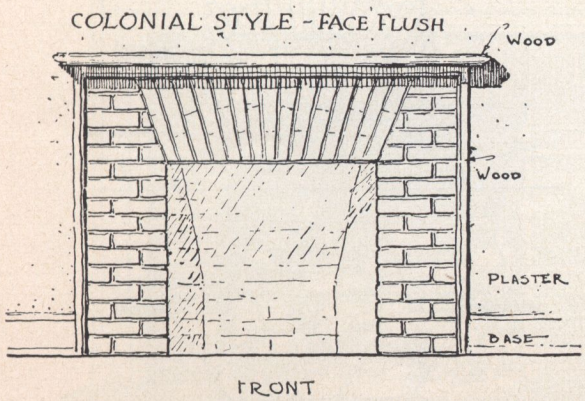


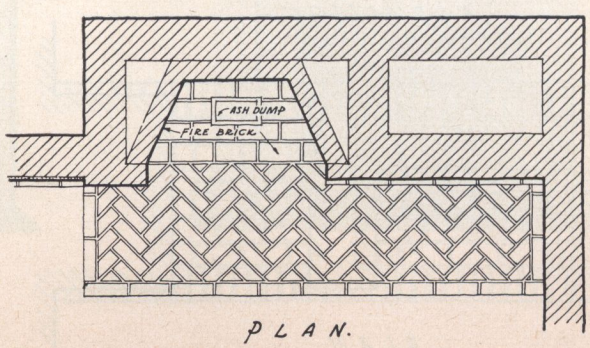






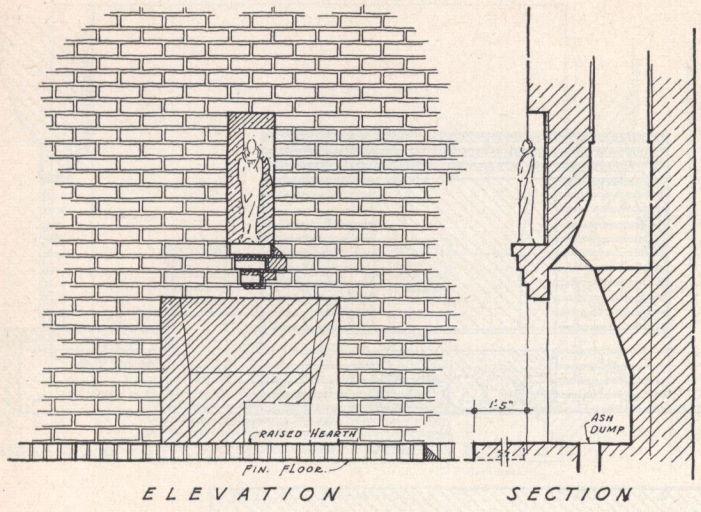




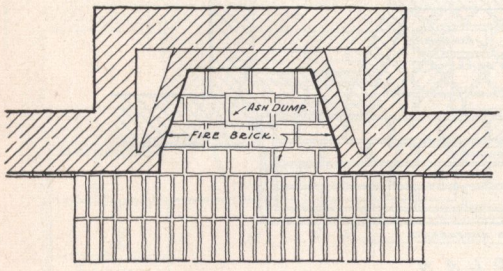


SUCCESSFUL FIREPLACES

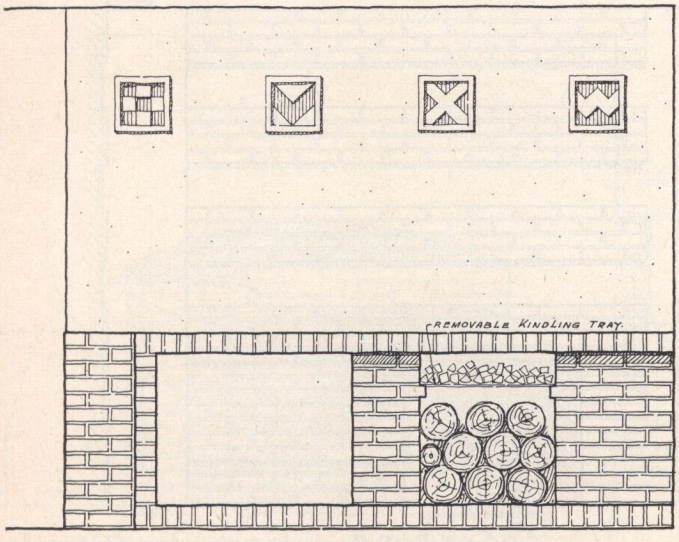
PORTFOLIO OF FIREPLACE DESIGNS



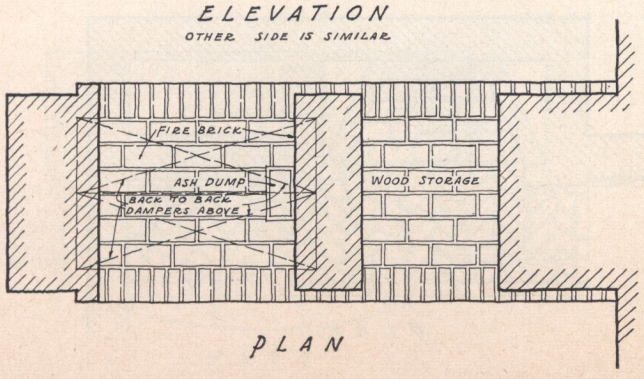
ELEVATION SECTION



PLAN



ELEVATION
OTHER SIDE IS SIMILAR



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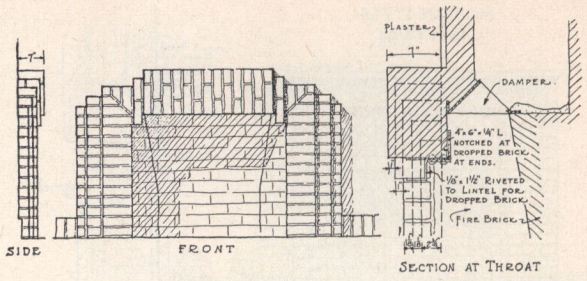
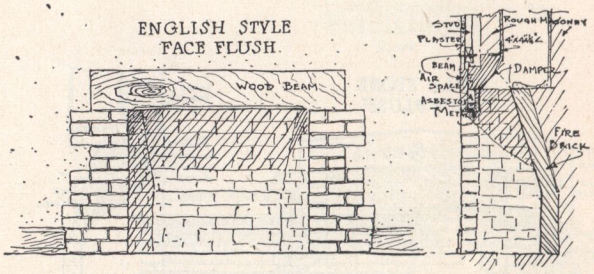


SECTION AT THROAT



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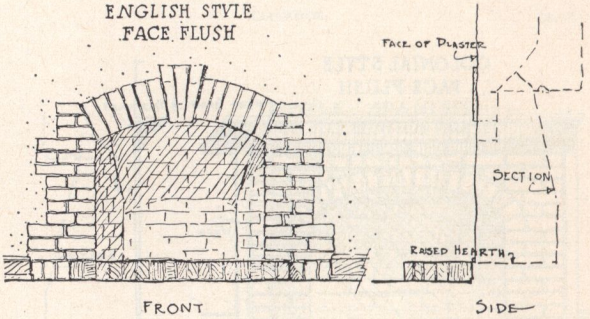
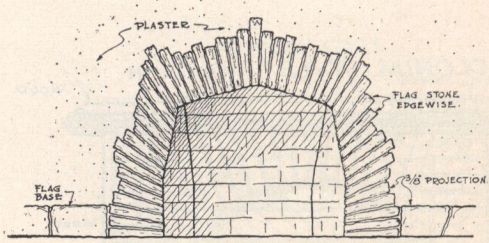
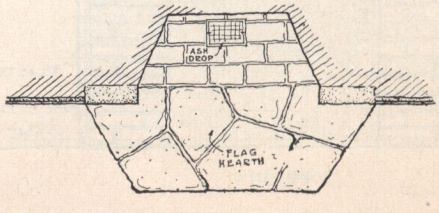
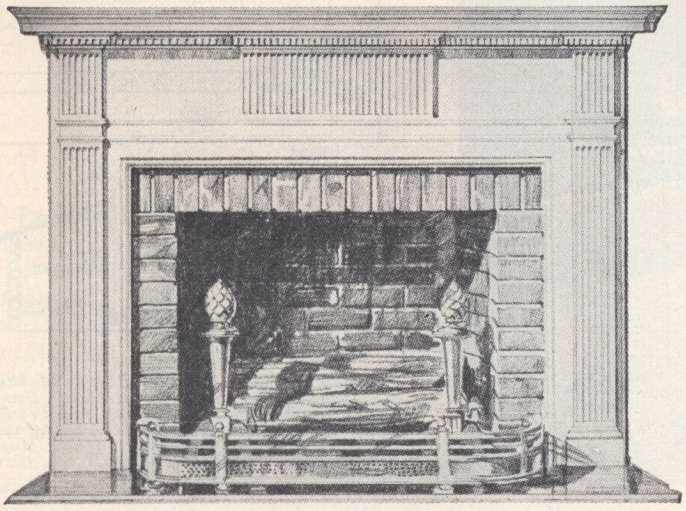


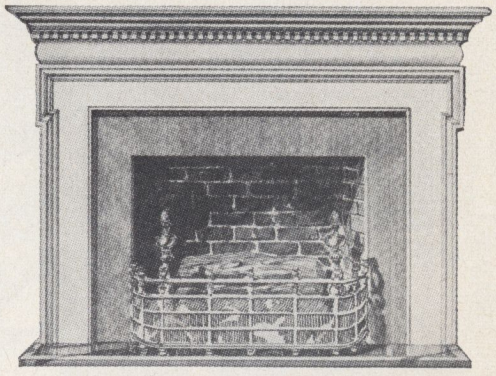


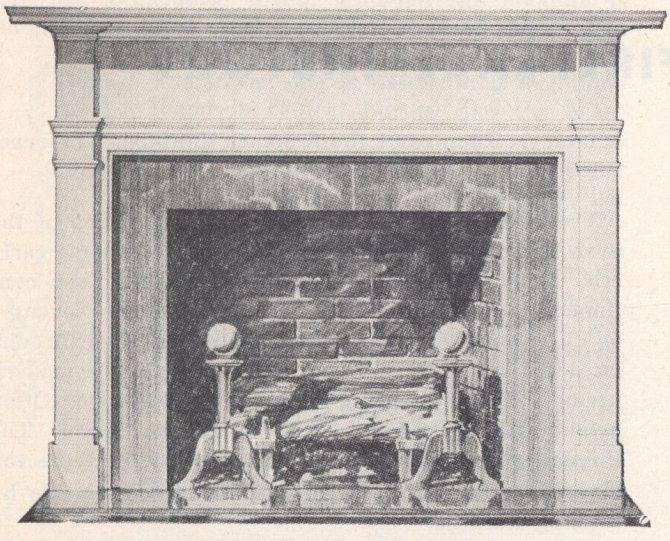


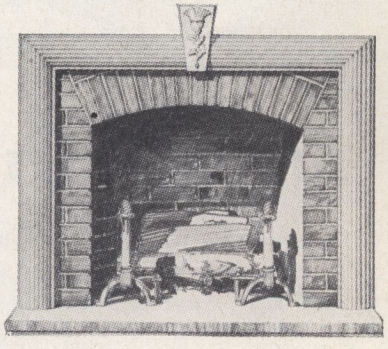
MANTEL DESIGNS IN WOOD

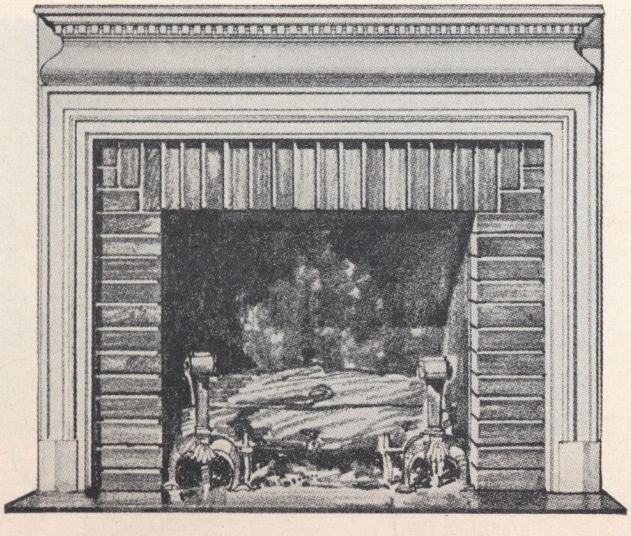
There are a number of companies making wooden mantels, as a rule carefully designed and well constructed, not necessarily expensive and an improvement to the appearance of any fireplace. We have also seen excellent mantels made by local carpenters with the aid of stock mouldings from the local lumber yard. The mantels on this page are shown through the courtesy of the Morgan Woodworking Co. at Baltimore, Md.

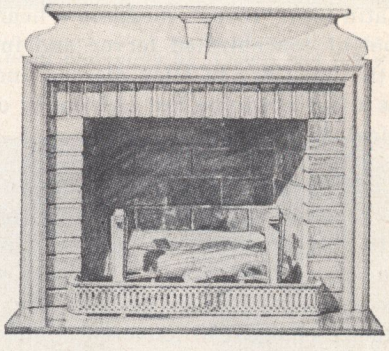


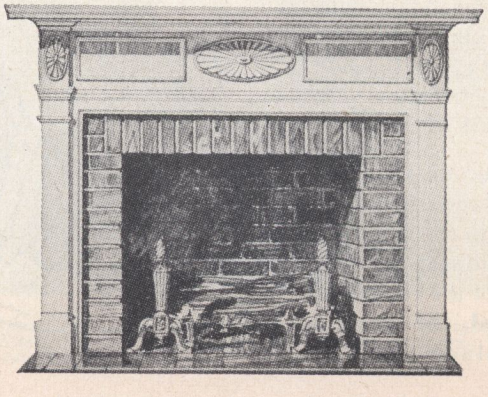


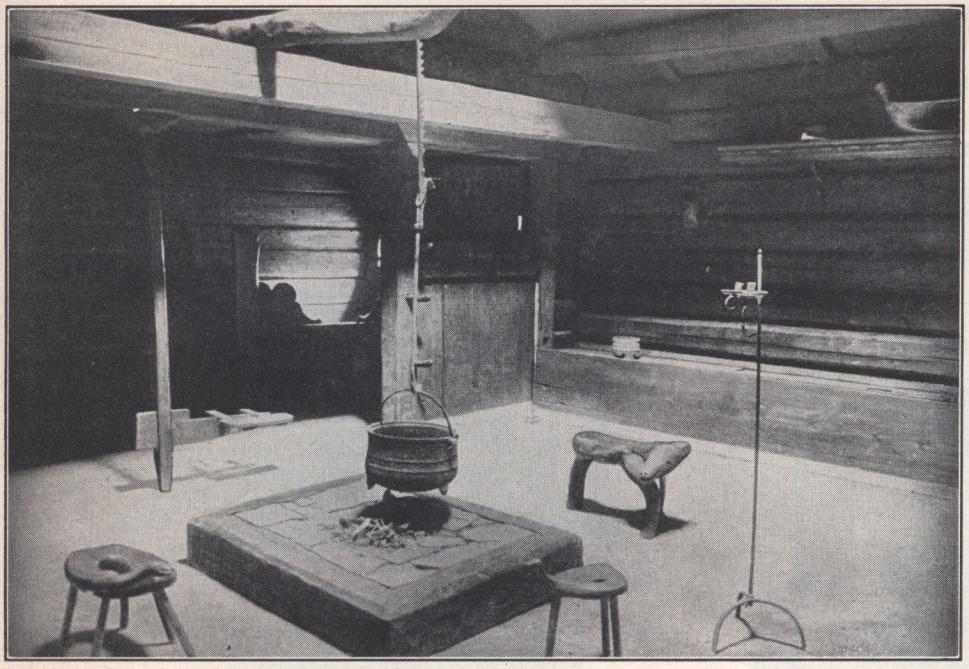


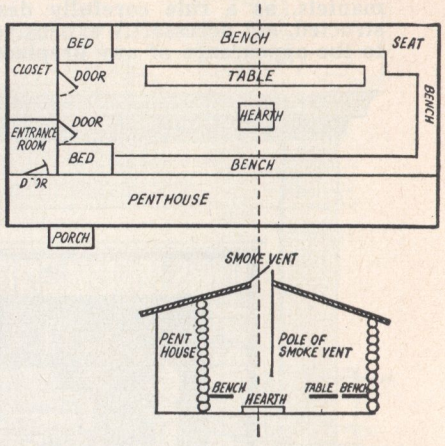










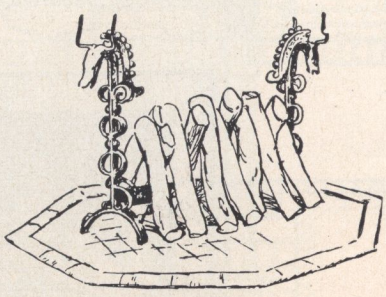


Sketch by Dean Francis Bacon, of the School of Architecture, Western Reserve University, showing plan and profile of medieval Norse dwelling with central fireplace. Photograph shows restored interior in Scandinavian Museum at Lillehammer, Norway.

AN OUTLINE OF FIREPLACE HISTORY

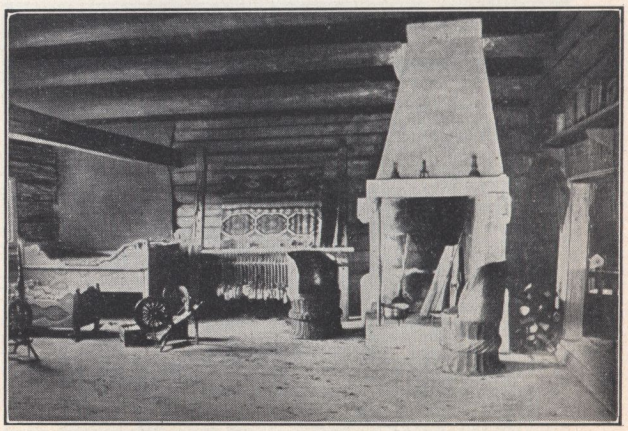
TRADITIONS regarding the use of fire have existed among all peoples but the most primitive. In every age of which we have record, the utility of fire has been manifest. Beyond that, fire has been endowed with mystical significance which we today, heirs of all the ages, cannot avoid nor disown. It is not accident that the Latin term "focus", meaning a hearth, survives as a symbol of concentrated fervor and interest. The power of the open fire to allay discord and fuse home loyalties is a fact not to be lost sight of in our practical and technical discussions.

Phases of Fireplace Development—In its earliest phase, the indoor fireplace consisted of a central hearth with perhaps some devices for supporting fuel and holding pots, pans and spits. Smoke was allowed to find its way out through holes in the roof, which were gradually changed to louvered chimneys. Among the more advanced African natives, the central hearth prevails today with roofs elevated a few inches above the side walls, to allow for the exit of smoke.



A second phase of fireplace building brought the fire from the center to the wall of the room and yielded the hooded fireplace with a chimney. Then came the fireplace thoroughly incorporated into the structure of the wall, usual today.

The idea of oven cookery and the separation of the oven from the open fire must have come in some early era. In typical cases, the open fire and the oven continued side by side, but not always. Outdoor ovens—or those enclosed in an outbuilding—prevailed through medieval and colonial times and well into the modern period. Jefferson had such an oven at Monticello. Often neighborhoods have used such ovens in rotation. The Russian peasant has his indoor oven of clay, the top being used as a couch and bed, made comfortable by cooking warmth.

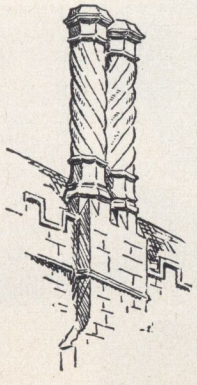


Also a restored interior in Scandinavian Museum. It shows the hooded fireplace, an early step away from the central hearth type.

Early Smoke Louvers

Persistence of Hooded Types—Many of the historic phases of fireplace design have persisted into the current century, kept alive by architects wedded to period treatments. The ornamental smoke louvers, symbolic of the central fireplace, did not long survive their utility, but Tudor chimneys, of which two examples are shown on this page, are to be encountered on luxurious homes in almost any American city, although yielding of late to the vogue of modernism. Much more vitality has been shown by the hooded fireplace of which two examples are shown at the left. The upper one has a medieval touch, although the hooding is nominal, the hood being somewhat recessed rather than projecting in the traditional manner. The lower one is based on a technique found in central Europe and the Scandinavian countries — half fireplace and half ceramic stove. Architect John Sherwood Kelly, who designed it, says that his inspiration was the Nuremberg stove. The hood is of modeled cement. Tiles are the Belgian Lion pattern like those found in the Plantin museum at Antwerp. The walls are knotty pine, stained brown. This fireplace also has the elevated hearth, lately increasing in popularity, and the corner position, often rendered desirable in homes where space is restricted. One argument for the hooded fireplace is the fact that, under certain conditions of design, the hood has distinct heating value, either as a convection medium, in the case of the metal hood, or as a means of conserving and emitting heat, where the hood is of masonry construction. An example of the former is found in the government design, published in Donley Devices for April 1949.

Tudor Chimney



Another Tudor Chimney

However, those owners who may be intrigued with the appearance of a hooded fireplace should know that it is exceedingly difficult to fit a damper to this type of fireplace. Regardless of other considerations, lack of a damper exposes the interior to falling soot.

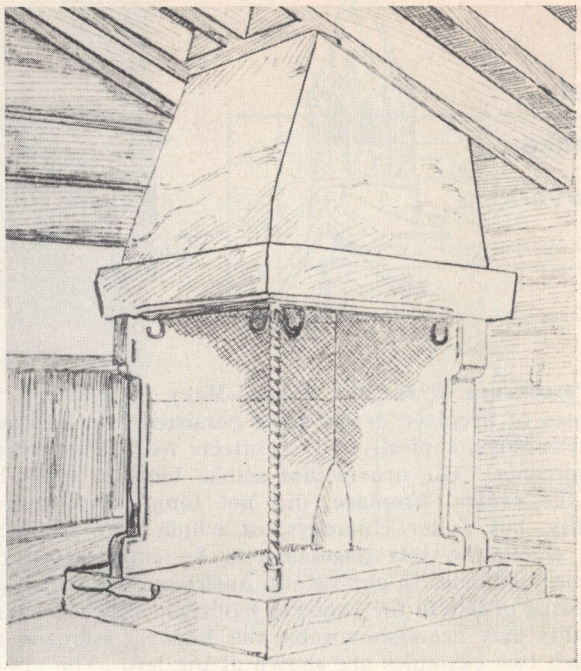
The influence of the medieval, hooded fireplace is seen in this quaint conception by Nichols and Fritsche, architects.

Influence of Nuremberg stove in fireplace designed by Architect John Sherwood Kelly for library of Eugene Miles, Shaker Heights, Ohio.

Scandinavian Fireplaces—The true home of the surviving hooded fireplace, however, is to be found in the Scandinavian countries, Norway, Sweden and Denmark. The fireplaces of these nations bear marks of very ancient origin. There are local differences of design and practice, but certain characteristics run through the great majority of them. Among these characteristics are—(1) The heavy, masonry hood, (2) elevated hearth, (3) corner position and (4) the practice of leaning the wood, upright, against the corner of the wall.

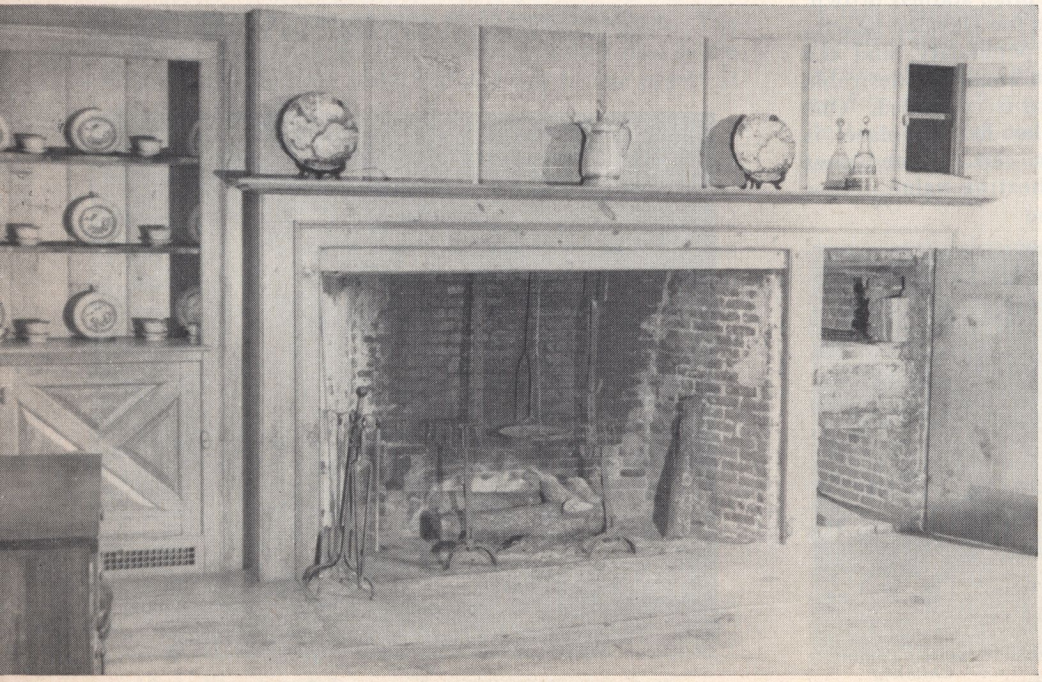
The historic aspects are twofold. Scandinavian countries developed from earliest times a highly distinctive interpretation of gothic architecture. This gothic period was prolonged into quite recent times, the northern countries being affected only slightly by the Italian renaissance, which swept the more southerly countries of Europe.

The Primitive "Peis"—Still the reliance of the Norwegian peasant, after many hundred years, is the peis (pronounced pace) which is the basis of more elaborated types found in these northern countries. The hearth is built on the ground at the corner of the peasant's cabin. Masonry walls are erected on two sides and notched to hold the ends of heavy beams which form an angle at the inner corner and make sills for the hood. The corner column has often been an old gun barrel. The hood is massively constructed and slopes toward a simple, open flue. The wooden sill was apparently not seriously exposed to the flame, since the firewood was leaned against the rear angle.

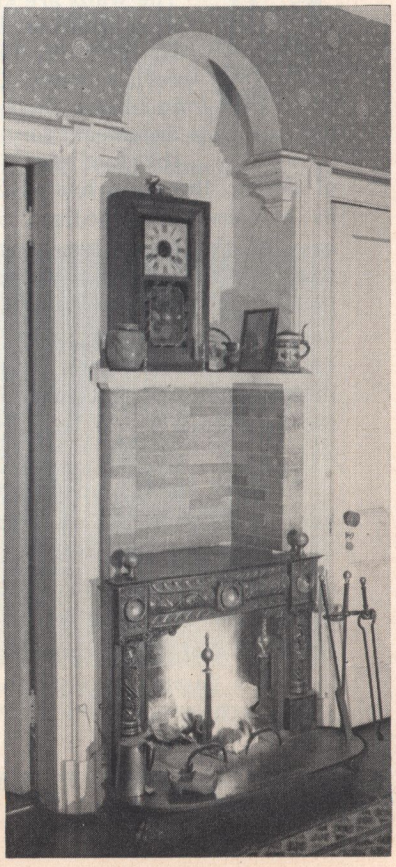


Typical Norwegian peis.

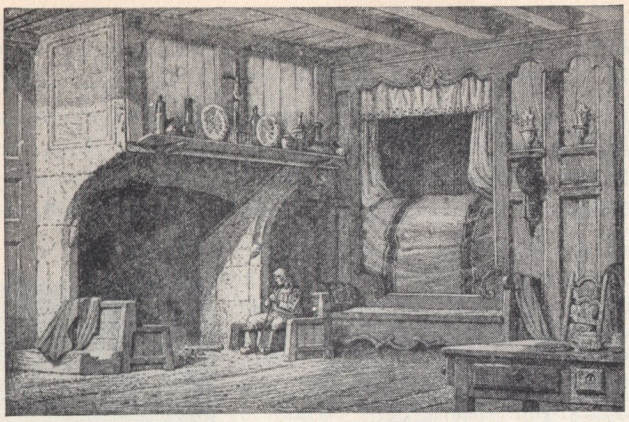
The masonry structure of the peis was, as a rule, quite free from the wall of the cottage. In some illustrations, it is evident that the fireplace wall does not even touch the wall of the dwelling, room being left to walk around it at the rear.



Colonial cooking fireplace at Southport, Conn., in a home now owned by W. T. Sampson Smith. This house, built in 1735, was long the residence of a British colonial official who used it as a residence and office.



At the right, a singular British metal fireplace unit installed in the study of Architect Edward Steese at Scarsdale.



Fireplace in French cottage in Brittany of the period of Louis XIV or XV, reproduced from a French architectural work by J. Pickering Putnam in "The Open Fireplace".

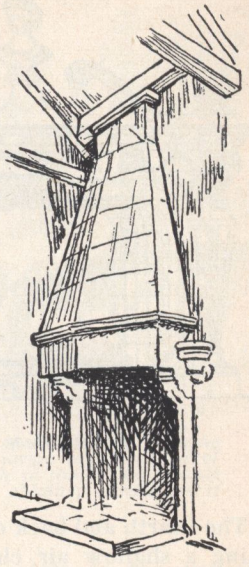
One might easily doubt the heating efficiency of a fireplace, with the fire so far back and with the smoke immediately voided through a straight chimney. Defenders place emphasis on the heating of the masonry hood, which acts as a convector; also upon the location of the masonry completely within the walls of the building.

Early Fireplace Progress—The earliest definite forward step came when fireplaces were moved from the center of the room to the wall, so that a building might have fireplaces in every room. Newer mansions in England's Tudor period then exhibited a multiplicity of chimneys, instead of the historic central louver. One old writer laments the enervating effect of so much warmth and declares, too, that roof timbers are weakened by the absence of the smoke that eddied among them and presumably toughened their fibers.

The andiron is one of the earliest fireplace accessories. In the day of the central hearth the upright members were similar at both ends. As a rule they had hooks or notches to support the two ends of spits on which meat was supported. When the fireplace became a wall recess, only one end of each andiron was given this vertical support, the spit being hung across from one iron to another.

The wall fireplace was a natural subject for decorative treatment. The history of fireplace design is the history of the various architectural periods in which fireplaces have been constructed, with this reservation—the kitchen fireplace remains much the same through succeeding generations, while the fireplace that heated residential quarters was the subject of decorative fancy that often became quite involved.

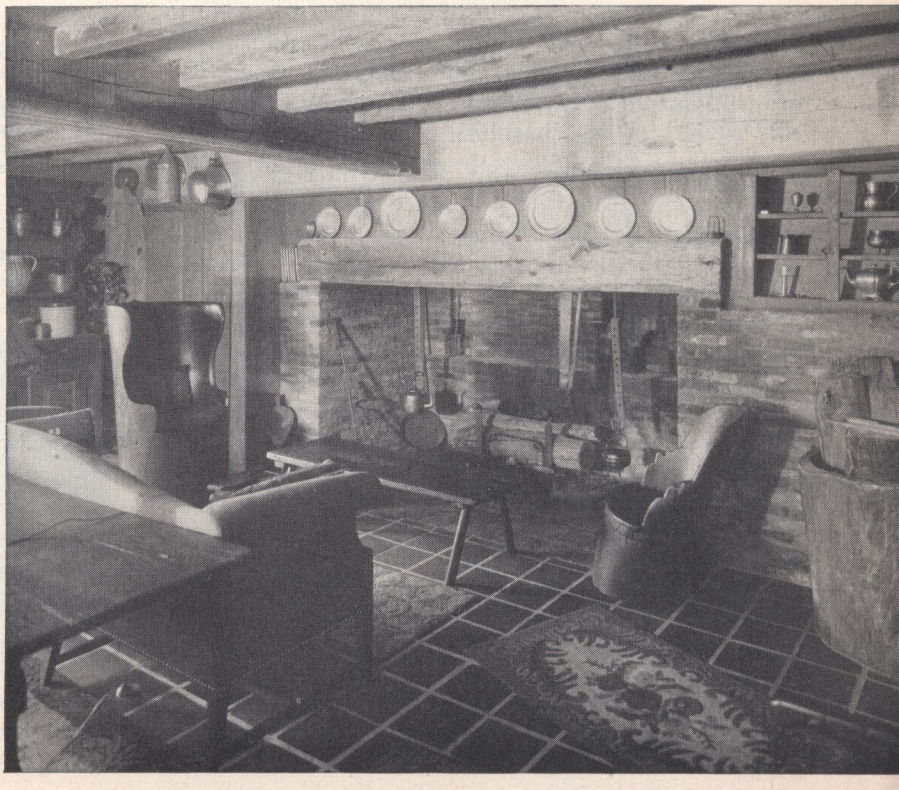
Efforts at Improvement—The spirit of scientific experiment that arose in the seventeenth century brought much discussion of the shortcomings of fireplaces and proposals for their improvement. Especially in France and, to a lesser extent in England, men experimented, wrote and argued on the theme of more heat for a given expenditure of fuel. An American architect, J. Pickering Putnam, digested the results of this era in his volume, The Open Fireplace, published in 1881 by James R. Osgood of Boston. We have this rare volume through the courtesy of Potter, Tyler and Martin, Cincinnati architects.



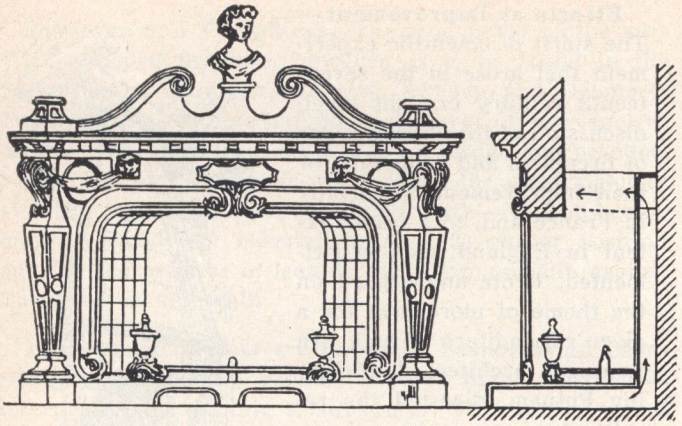
Medieval hooded fireplace

FIRST CIRCULATING FIREPLACE

With preliminary mention of disputes about the hood—does it promote or retard smoking—the author remarks that the first recorded effort to study improvement on a scientific basis was by Louis Savot, a Paris physician with zeal for sanitary reforms in dwellings. A design of a fireplace which was built in the Louvre palace, according to his principles, seems to entitle him to the honor of originating the heat-circulating fireplace.



Fireplace in Neal Mallon home, Shaker Heights, Ohio. Entire room built of Early American materials salvaged from the Massachusetts coast region and assembled according to the design of Architect Charles G. Colman of Cleveland for R. C. Rudolph, former owner.



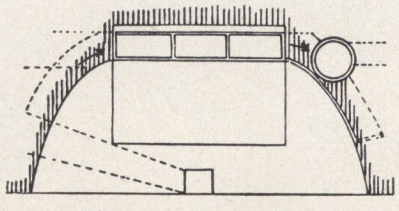
Savot's Heat Circulating Fireplace

The hearth and back consisted of metal plates, partitioning a shallow air chamber, below and behind. Air entered through openings at floor level, passed backward and upward, being discharged through tubes that came out just under the mantel. Putnam declares that this design fell short of excellence through failure to take air from outdoors, the "ventilating fireplace" being the author's special enthusiasm. He remarks that Savot's arrangement has been patented "over and over again" by ensuing inventors. Savot was born in 1579 and died in 1640, 66 years before Benjamin Franklin was born. So Franklin's Pennsylvania Fireplace must be viewed as only one of a long series of experiments with heat circulation.

In considering the contributions to fireplace practice made by Franklin and Count Rumford, it is pertinent to recall that both enjoyed long periods of residence in Europe, where fireplace invention and development was evidently a subject of constant endeavor by a considerable number of experimenters.

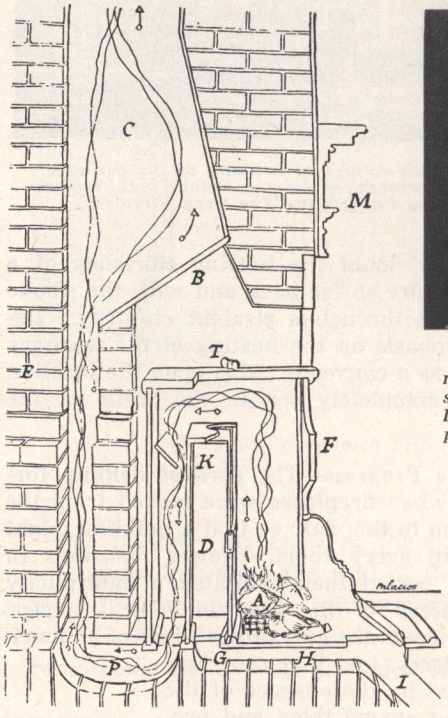
Ventilating Fireplaces—Sir John Winter is credited with being the first to introduce outdoor air as a source of draft, but Putnam awards the honor of embodying ventilation with circulation to a Frenchman, Gauger, as marking the first important advance after Savot. He introduced air by means of metal "caliducts" or "meanders". The word "ventilation" had not existed up to that time and the translator of Gauger's writings, Desaguliers, was the first to use it.

Gauger recognized another important principle, the need for shaping the sides and back of a fireplace to reflect maximum heat into the room. He adopted an elliptical form —theoretically ideal had the heat all been radiated from a single focal point. Gauger's work was publicized about the year 1713.



Gauger's Hearth Plan

Two American Innovators—There is record of many French and English experiments in the improvement of the fireplace, but readers will be most interested, perhaps, in the work of two Americans—one universally known and the other singularly overlooked. The first is the beloved Benjamin Franklin and the second Benjamin Thompson, Count Rumford. It is significant that both had long contact with Europe, although neither acknowledges any debt to previous thinking.



FRANKLIN FIREPLACE

F—Front of metal unit. G, H, I—Cold air duct. D—Hot air chamber. K—Hot air outlet. P—Passage for smoke under false back. B—Removable slab connecting false back to fireplace breast. T—Nut at head of rod. A to C—Course of flame and smoke. From rendering by Rafael D. Palacios in The Ben Franklin Reader, edited by Nathan G. Goodman. Courtesy of Thomas Y. Crowell Co., publishers.

Head of Benjamin Franklin from statue in Franklin Institute, Philadelphia.

The Pennsylvania Fireplace—Franklin described his Pennsylvania Fireplace in a pamphlet offered for sale in 1844. It embodies both ventilation and heat circulation and must be viewed as one of the more practical designs of the era. Fire was built in the forward chamber of the metal unit. Heat and smoke passed over the top of a central hot air chamber, being drawn down behind it to a level below the hearth and then discharged upward behind a false fireback of brick. The false back was connected with the fireplace breast by a sloping slab of stone or slate. Air was drawn from outdoors and was introduced beneath the hearth level, being discharged from side outlets of the central, iron chamber.

Franklin's description of the merits of this fireplace remains a classic exposition of the advantages of heat circulation — even heat throughout the room; people are comfortable on both sides, whether they sit near the fire or at a window. Franklin's widely published letter to Jan Ingenhouse in 1785 on "The Cause and Cure of Smoky Chimneys" is still a splendid treatise on the subject.

In regard to the Pennsylvania Fireplace, he writes, "Your whole room is equally warmed, so that people need not crowd so close around the fire, but may sit near the window and have the benefit of the light for reading, needlework, etc. They may sit with comfort in any part of the room, which is a very considerable advantage in a large family, where there must often be two fires kept, because all cannot conveniently come at one.

"If you sit near a fire you have not that cold draught of uncomfortable air nipping at your heels as when before common fires, by which many catch cold."

He also mentions that a room so heated makes an excellent nursing room in case of sickness. The fact the Pennsylvania Fireplace retains heat that would otherwise be lost up the chimney is a point he stresses.

There is no record of a Pennsylvania Fireplace in any surviving building, but Franklin supplies testimony that they represented more than a passing idea. He says in his "Life" that Governor Thomas of Pennsylvania offered him a patent, but that he declined. "We enjoy great advantages from the inventions of others," he declares, "and should be glad of the opportunity to serve others by any invention of ours." He adds, "An iron monger in London . . . assuming a good deal of my pamphlet and working it up into his own . . . and making some small changes in the machine, got a patent for it there and made, as I was told, a little fortune by it. . . . The use of these fireplaces in very many houses, both of this and the neighboring colonies, has been, and is, a great saving of wood to the inhabitants."

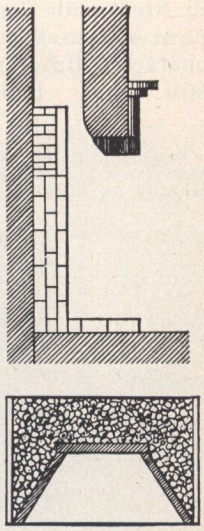
Rumford's Influence—Benjamin Thompson was born of poor parents in Woburn, Mass., in 1753. He was a precocious boy, calculating an eclipse of the moon when only thirteen. His attractive personality won him the favor of British colonial authorities and proved his undoing as an American. Appointed head of the New Hampshire militia before he was twenty-two, he antagonized older officers. In the early days of the revolution he stood trial as a Tory but no verdict was rendered. However, he joined the British in Boston and became the bearer of dispatches to London announcing the evacuation of Boston by royal troops. Within six weeks of his arrival in England, he was holding the post of under-secretary of state in the British cabinet. He returned to America only as an officer of hostile troops late in the war.

Benjamin Thompson, Count Rumford, from Gainsborough portrait in museum of Harvard University.

Drawing from Harpers Weekly of early date showing New England family scene, with large, cooking type of fireplace. Note that it is big enough so that young couple is seated within the fireplace—the chimney corner, as it was often called.

In his ensuing career, he distinguished himself as administrator in Bavaria, being virtual ruler of the nation. He set beggars to work in his House of Industry, put the army on a paying basis by public works and instituted many other reforms. His observations on heat as a mode of motion led to important scientific discoveries. For his services, he was made a Count of the Holy Roman Empire, taking the title, Count Rumford, from Rumford, N. H. (now Concord), his former home.

Rumford's work as a fireplace expert was largely performed in London, after his return from Bavaria. There he founded the Royal Institution, devoted to practical science. At one time, he writes, he had upward of 500 smoky chimneys under his care. His notebooks abound in designs of cooking appliances, furnaces and kilns as well as fireplaces. These were published by the American Academy of Arts & Sciences, which he founded by the terms of his will, the date of publication being 1872. He also founded a Rumford Professorship at Harvard and made various bequests in the aid of American objects, his former home town of Concord being among the beneficiaries.



Plan and section of Rumford fireplace from Putnam's text book. Discrepancy between two parts of the design is noticeable.

Worked for Simplification—Where many inventors had complicated fireplace practice with iron backs, tubes, louvers and regulating devices, Rumford stuck to firebrick. His greatest single achievement was to narrow the

There is a charming flavor of early America in this rugged stone fireplace in the home of Amos Moyes, at Lake Cardinal, Ohio, designed and built by the owner.

Authentic Dutch oven fireplace in the century-old home of Francis R. Howe, Mohican Trail, Birmingham, Ohio. Confronting it, today, is the complete electrical equipment of a modern kitchen.

throat of the fireplace, retarding the exhaust and throwing more heat into the room. This with the shallow hearth and reflector-like back, plus emphasis on moderate size, greatly facilitated fuel saving.

Summary of Experiments—Putnam berates Rumford for omitting credit to preceding inventors and for failing to incorporate ventilation in his designs. He attributes Rumford's great influence on ensuing fireplace practice to his clear, lucid style of presentation as well as his personal prestige.

There is no question that Rumford worked a revolution in fireplace practice that creators of more involved mechanisms failed to effect. The shallow hearth with splayed sides, the narrow throat and great reduction of dimensions were generally accepted in Nineteenth Century practice. One line of development led in the direction of the small, fixed grate, characteristic of many fireplaces in older homes that still stand. Refinement of mechanical schemes to produce more heat led ultimately to enclosed stoves—where fuel economy will always be easier of achievement than in an open fire.

Revival of Heat Circulation—The chief surviving phase of the era of fireplace experimentation is the heat circulating fireplace, of which there are half a dozen or more, including the Donley Heatsaver. First in this revival was the well-known Heatilator, which was launched 300 years after the date of Savot's model.

Reliance on cast iron plates bolted together was probably a potent reason for the brief vogue of earlier mechanisms in this field. Such plates would be prone to warp and open at the seams. Success of the Heatsaver type of fireplace unit, on the other hand, is also a matter of fabricating technique—the development of seam welding used in connection with steel plates.

Fireplace in the old Ransom home, built in 1844, in Hartland township, Huron County, Ohio, and used until quite recently for cooking large meals for family and farm help.

Colonial fireplace at Washington, Conn., in 200-year-old home of Edwin H. English. It is framed by three blocks of granite. The one forming the lintel is seven feet in length.

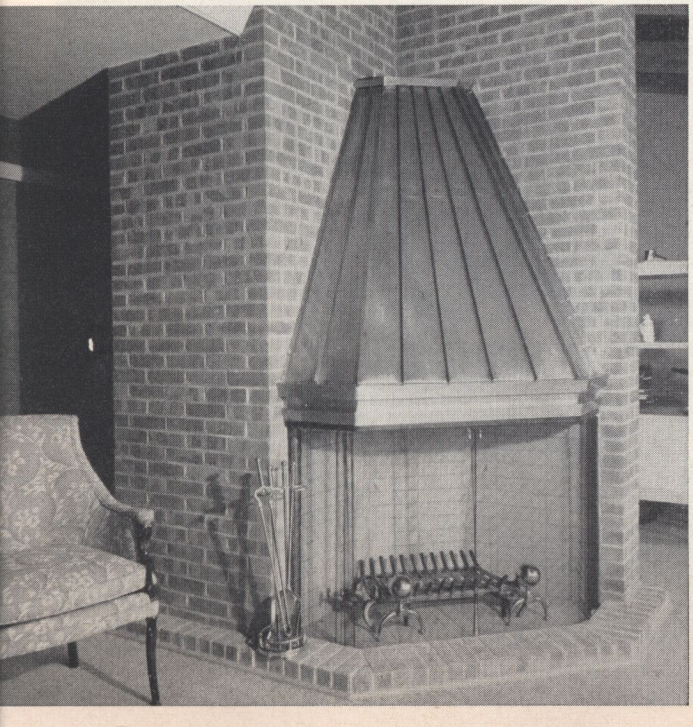
Fireplace in taproom of Dunham Tavern, the oldest structure in Cleveland, maintained now by the Society of Collectors.

Fireplace in 130-year-old home of Bert Bigelow, Burton, Ohio, exhibiting quite exactly the Rumford proportions. It heats prodigiously.

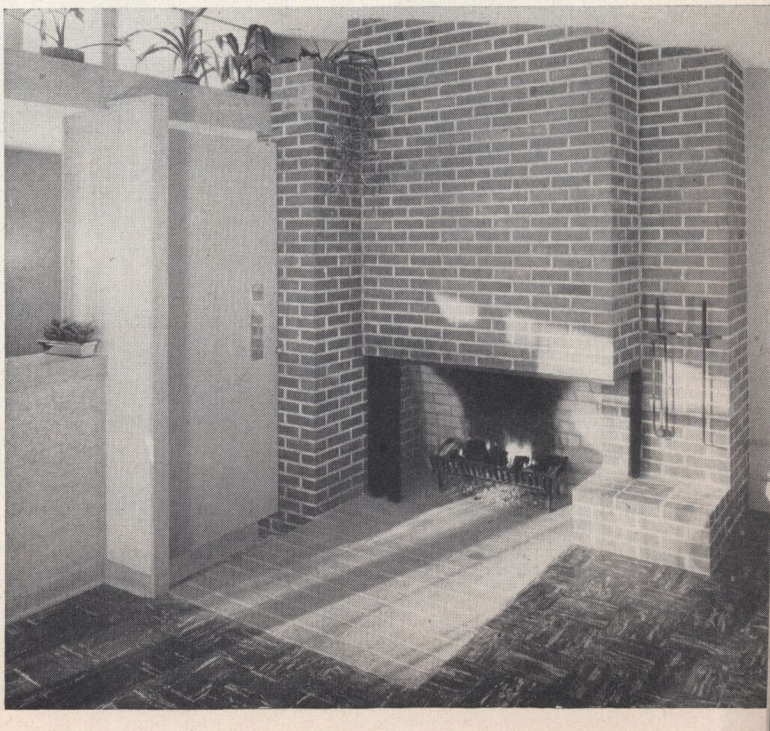
Modernism Vs. Tradition—The fireplace has been a household shrine for many hundreds of years and devoted hands have zealously adorned its outer aspect with whatever current art had to offer. The finest picture hangs above. The convenient mantel supports the family clock, prized vases and figurines.

Enters then the modern movement with its ban on ornamentation, its reliance on bare and often sterile rectangularity and its espousal of a technology that questions the whole existence of so ancient a device as the fireplace. Another threat is the home so small that inclusion of the fireplace is a problem. However, the present spirit is one of compromise. Established human instincts are not surrendering to esthetic dogma. Fireplace fussiness is giving way to more orderly disposition of surfaces. Smaller fireplaces meet spatial objections. The future of the fireplace, grounded in a glorious past, is to be viewed with equanimity and the homage due to an institution that has satisfied the deepest yearnings of humanity.

Modern adaptation of the hooded fireplace in the home of H. Wendt, Toledo, Ohio; Peterson, Hoffman and Grow, Architects.



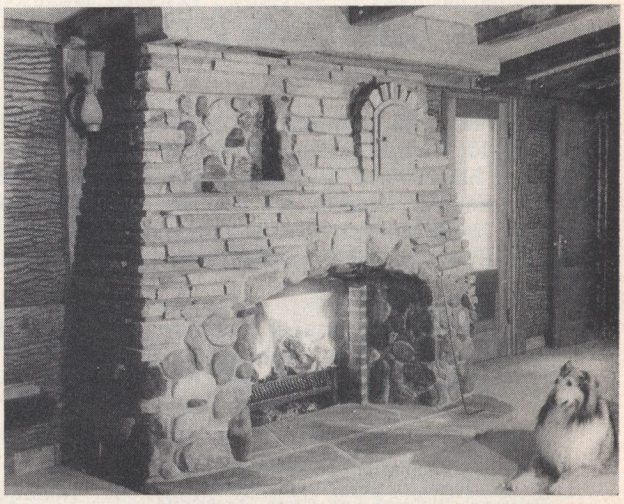
Contemporary fireplace, built by Kohler Brothers, Saginaw, Mich., which exhibits aspects of both internal and projecting corner fireplace design.



A PAGE OF HEATSAVERS

Wilbur R. Minch of Whitewood Road, Brecksville, Ohio, built both the upper Heatsaver and the one at the right to warm the living room and basement playroom of a charming rural home which he constructed for himself. The beam that forms a lintel on the upper fireplace was submerged in Cleveland harbor for 80 years as part of a dock. The material is Tennessee ledge rock.

H. E. Fenwick of Independence, Ohio, is another do-it-yourselfer. The Heatsaver fireplace with mirror (left, below) was his handiwork, with only slight professional assistance.



The Fred Donley Heatsaver fireplace, shown at the right, has outlets turned rearward to heat the kitchen. There is an incinerator at the back, located in a utility room. This home, an example of open construction, affords a fireplace view from a spacious picture window. There is a mezzanine overhead, reached by a stair at the left.

This Heatsaver Fireplace is located in the new home of Miss Leona B. Smith, Euclid, Ohio. It illustrates a common method of rendering outlet grilles inconspicuous by locating them in the sides of wall projection.

DONLEY HEATSAVER FIREPLACES

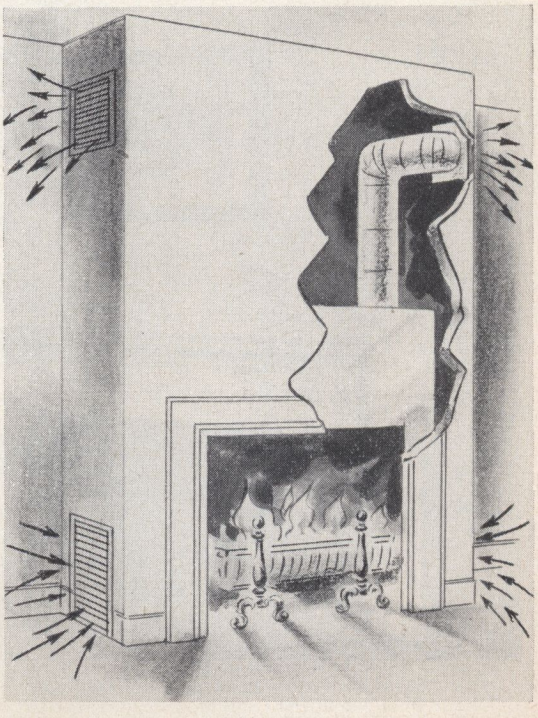
PLANNING for maximum heat delivery, with all the recognized charm and intimacy of the open fire, means planning for a Heatsaver fireplace. This involves installation of a metal unit within your brickwork. A carefully designed fire space, including firebox, smoke chamber and damper, is surrounded by an air chamber. Air enters the air chamber near the floor, is heated and discharged through pipes and outlet grilles to the upper areas of the room.

It gives the circulated heat of a furnace with the direct radiation of a fireplace—efficiency plus charm. Of all possible solutions to your fireplace problem, the Heatsaver conserves the greatest volume of heat that is ordinarily wasted up the chimney. It accomplishes this without sacrificing any of the advantages of a typical fireplace. The use of a metal unit assures correct internal proportions and the Heatsaver fireplace is, above all things, a satisfactory and attractive focus of fireside enjoyment.

Confirmed by Research—The Heatsaver is the product of much research and field experience, all directed to the object of giving the owner the utmost possible heat for his expenditure in fuel. However, the Donley Brothers Co. sought the completest possible assurance that everything possible had been done toward this end. So we enlisted the services of the largest independent research laboratory in the world to find out for us just how much of the heating potential is being realized by the Heatsaver and to suggest any possible improvements.

Program Lasted a Year—The laboratory program occupied a year. An experimental room was built and a Heatsaver installed. Uniform, measurable fuel consumption was assured by using gas as the laboratory fuel. Thermocouples electrically connected to a recording device were placed at some 16 points, some of them on various parts of the Heatsaver and some in different parts of the experimental room. Regular and frequent readings were taken under varying conditions.

The result was the confirmation of a figure for heat delivery that surprised the laboratory staff, accustomed to research in many types of heating equipment—a



The Karl Kramer home at Olmsted Falls, Ohio, has a large living room warmed by this Heatsaver. Above the mantel is a mirror.

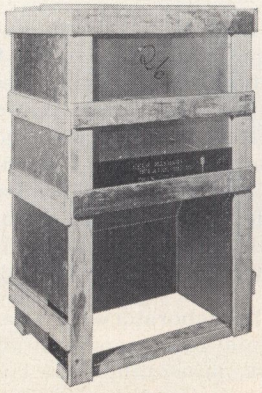
figure which fully justified all the claims we have ever made for the Heatsaver.

Now in Modular Series—In the main we found that little could be done to improve the heating qualities of the Heatsaver. However, another reason presented itself for remodeling. That was the desire to bring all its dimensions in conformity with the new modular standards, as urged by the American Institute of Architects and the American Standards Association. The object is quicker and more economical installation, since all installed dimensions are derivatives of the four-inch "module".

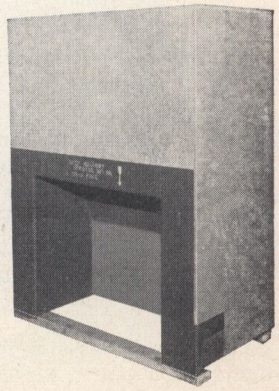
Why Circulation of Heat?—Some home owners, or prospective owners, will ask why a metal unit is desirable in a fireplace. What is the advantage over a masonry fireplace, such as have warmed homes for centuries? The answer is found in the need for heat that warms the entire room, not just the area in front of the flame. This need has been realized for centuries. Every experimenter who tried to increase the heat delivery of an open fire has made some form of metal unit the basis of his attempt. But the opportunity to achieve complete success, with economy and safety, awaited the development of welded steel. Benjamin Franklin's Pennsylvania Fireplace and preceding ones from Savot's time onward (see historical chapter) were designed to circulate air over heated metal.

However, it was necessary to rely on cast iron plates, bolted together, through which air was circulated. Such plates are costly and unsatisfactory for the purpose.

The Hawthorne Valley Country Club near Solon, Ohio, has a lounge fireplace in the form of a 48-inch Heatsaver, utilizing the same stack as another fireplace in a room at the rear.



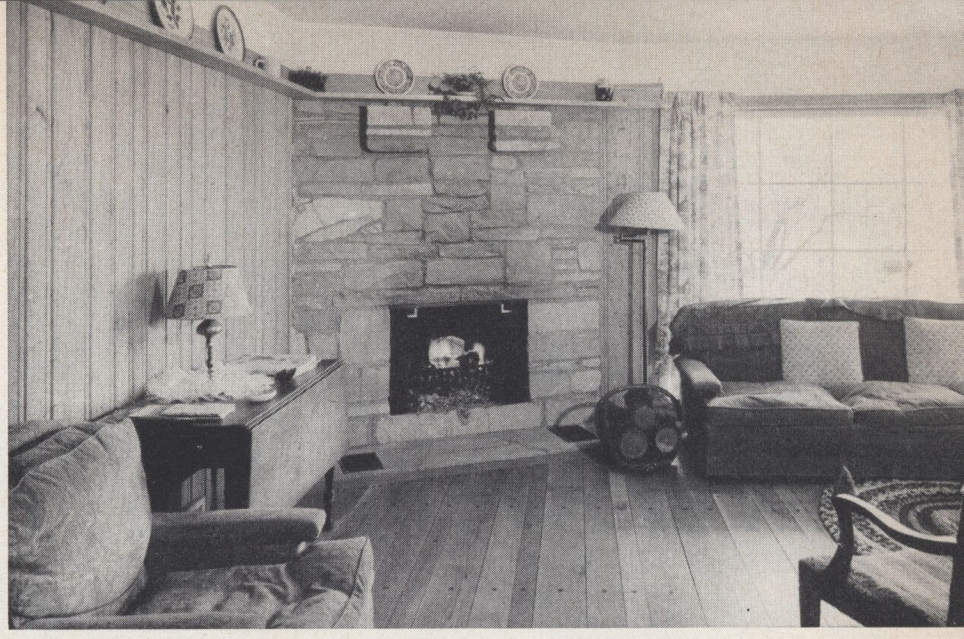
When your Heatsaver arrives, it is protected by a strong crate like this.



Plain exterior of uncrated Heatsaver gives little hint of damper, throat, tubes, baffles that give it its efficiency.

Two Kinds of Heat—For complete understanding of circulated heat, we must recognize one important distinction. There are two kinds of heat—(1) radiant heat that comes directly from the flame and (2) circulated or convected heat that results from the contact of air with heated surfaces.

Radiant heat cannot heat the air. It only heats persons and objects coming within range of its rays. Of course it heats the metal walls of the Heatsaver's fire chamber to a high degree, and contact of heated metal with air in the adjoining air chamber heats it and promotes its circulation.



Verne Harris, patent attorney, built his own rural home at Solon, Ohio, installing this Heatsaver Fireplace, erecting baffles of stone instead of grilles.

Why the Heatsaver Is Best—The Heatsaver excels the masonry fireplace as a heating device because it yields both radiant and circulated heat.

It excels in the field of heat circulating fireplaces by exposing a greater area of heated metal to the heat of the fire. Also the heat is circulated from the heated plates most effectively, assisted by an air passage through the smoke chamber.

The result is that the Heatsaver warms you wherever you are within the interior in which it is installed. In applauding this type—represented by his own Pennsylvania Fireplace—Benjamin Franklin wrote that instead of being toasted on one side and chilled on another, people were comfortable on both sides.

Upper Surfaces Heated—In achieving more exposure of heated metal to circulating air, the Heatsaver takes full advantage of the upper surfaces surrounding the smoke chamber. It has seemed a reasonable assumption that these surfaces would add to the convection of heat, since it is a well-known fact that heat rises.

It was partly to test our belief on this subject that we engaged the services of the Battelle Memorial Institute of Columbus, Ohio, to carry out a year's research program. Testing the distribution of heat in different portions of the Heatsaver by thermocouple readings, we found that heat from the lower, or firebox, areas varied from 404 degrees Fahr. to 552 degrees, according to location of the thermocouple. Average of all lower readings was 462.2 degrees. Readings from points in the bonnet varied from 279 to 390 degrees, with an average of 324.07 degrees.

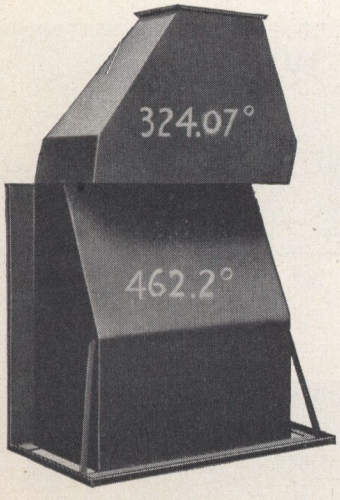
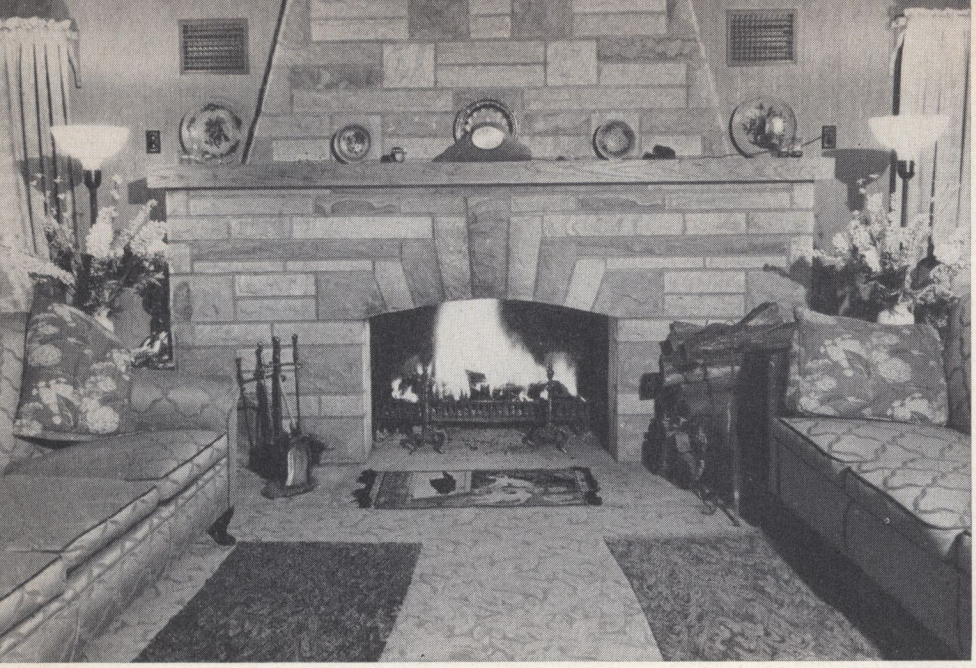


Illustration of a 36" Heatsaver with outer casing removed. Shows average surface temperature and large area of surfaces that transfer heat to the warm air chamber.

Area above firebox —2912 sq. inches.

Area around firebox—2604 sq. inches.

At the right is a corner Heatsaver in the home of Gen. L. S. Conelly at Walton Hills, Ohio.



Heatsaver Fireplaces

At the left, Heatsaver in the spacious living room of H. H. Ackley, Geauga Lake, Ohio.

Middle left—Heatsaver that fulfills many of the heating functions for the residence of Dr. Paul Albrecht, Cuyahoga County, Ohio.

Lower left—Heatsaver fireplace of Carl W. Johnson of Shaker Heights, Ohio, whose recreation is big game shooting.

Middle right—Heatsaver of Henry Zuengler, Strongsville, Ohio, heats upper rooms by two extra pipes and grilles.

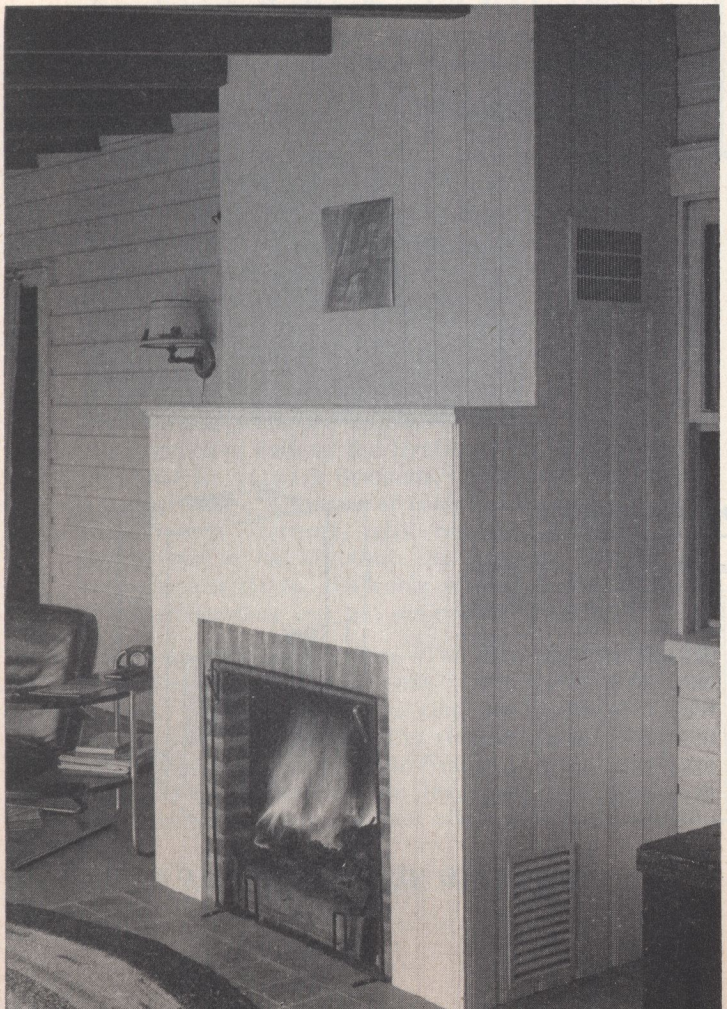
Lower right—Florida can have its chilly days, so Mr. and Mrs. N. D. Fraser of Sarasota appreciate their Heatsaver.

Boy Scouts at Brecksville, Ohio, have a fine cabin by courtesy of their friend, Mike Cutter. A Heatsaver warms it amply.

(Continued from p. 47)

In the model of Heatsaver used for this test, the upper and lower exposed surfaces are practically equal in area. Comparison of the two averages indicates that 59 per cent of the average temperature readings pertained to the lower part, with 41 per cent around the upper part or bonnet.

Conditions of Test—This research was conducted by means of a calibrated calorimeter room, which permitted the research staff to evaluate the results with assurance. The means of precise measurement used in the test avoided those variables which could have left doubt as to the accuracy of the result.

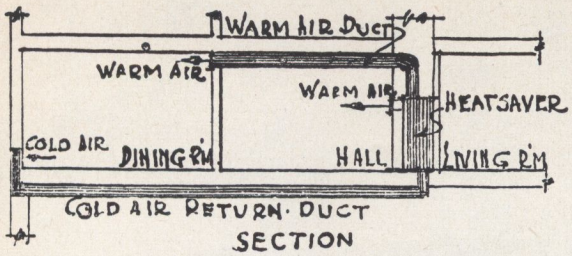


Similar to Furnace—Many questions other than those mentioned were investigated in the course of this research, including suggestions for improvement of design. In regard to the upper and lower temperatures, findings bore a resemblance to those resulting from investigation of hot air furnaces, in which a relationship of 60% to 40% had been temperatures of firebox and bonnet. It seems evident from these tests that the owner who selects a Heatsaver for his home is saving a considerable quantity of potential heat that would be lost up the chimney, in the case of a unit that circulates only the heat generated in its lower part—a generous return for a slightly greater cost.

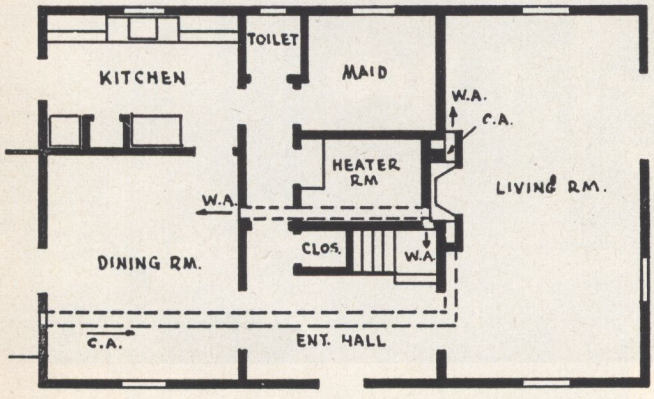
Location of Inlets and Outlets—In the great majority of cases, a Heatsaver fireplace is installed with regard to heating a single room, usually a living room, the radiant heat of the fire and the circulated heat from the grilles both serving the same room.

However, in the Sanford Fox residence, Atlantic City, pictured at the top of the next page, a warm air duct is carried horizontally 10 feet through the top of a service room and across the top of a passage, to heat a dining room on the opposite side of the house. As an aid to drawing the heat through this long horizontal pipe, the cold air is drawn from the opposite side of this same dining room, through a duct beneath the floor, utilizing the space between two floor joists. The installation is described as entirely successful, the dining room being kept at a comfortable temperature on chilly days. No fan was necessary to obtain good circulation. The use of fans for increased circulation of warm air has not been found necessary with the Heatsaver.

This Heatsaver was installed on an enclosed porch by a 19-year-old boy, Don Fanckhauser, who also took the picture.



SECTION

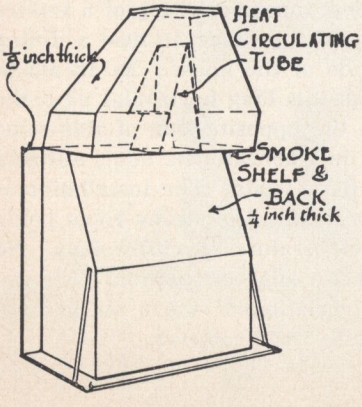


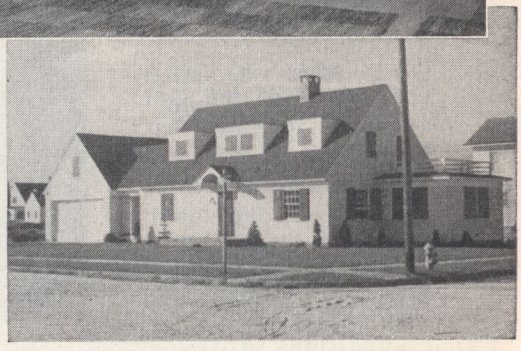
PLAN

Room-to-Room Circulation—Location of inlets and outlets at a distance from the heating unit is not typical Heatsaver practice. While it doubtless assists circulation, it involves additional cost that is not justified in the greater number of instances. The normal circulation of air from one room to another produces a comfortable temperature in all rooms not closed tightly against such circulation.

This is particularly true in typical small homes, where there are arches between adjoining rooms, or where it is customary to leave doors partially open much of the time. The home in Northfield, Ohio, pictured on the ensuing page, has warm air outlets in the kitchen and bathroom. Return of circulated air through doorways to the inlets at the side of the fireplace effects a general warmth throughout the house.

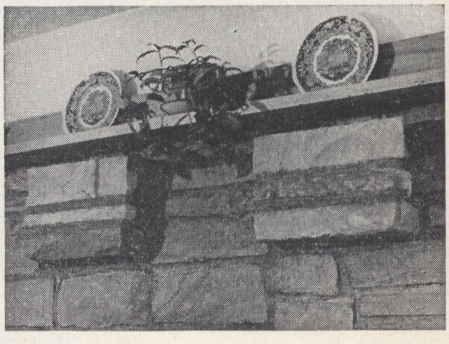
Built for Years of Service—The Donley Heatsaver is built for years of gratifying service. Steel of differing thickness is used in different parts. Where it is subjected to severest heat, the thickness is one quarter of an inch. Lighter weight steel is used where duty is less severe.





Sanford Fox, at Ocean City, N. J., owns this home in which dining room beyond 10-foot hall is heated by Heatsaver. Note how cold air is drawn from opposite side of dining room.

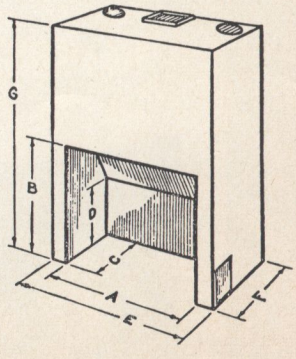
Though masonry fireplaces have splayed side walls, for good reason, the Heatsaver has square interior side walls for equally good reasons. This increases the area of metal exposure, over which air is warmed and, incidentally, permits burning of logs with length equal to the full width of the fire chamber. Splaying of side walls in masonry fireplaces assists in the reflection of heat into the room. In the case of the Heatsaver, there is no loss if heat fails to be reflected. It passes through the steel wall and augments the heating of air that will be circulated through outlet grilles.

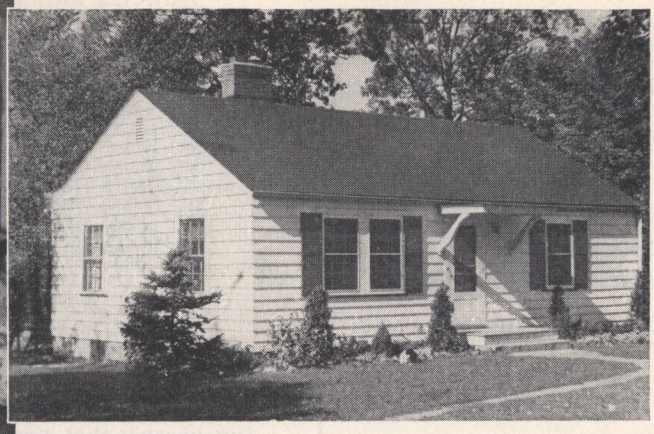


At the right is a close-up of the stone baffles that sub for grilles on the Verne Harris fireplace, shown on Page 47.

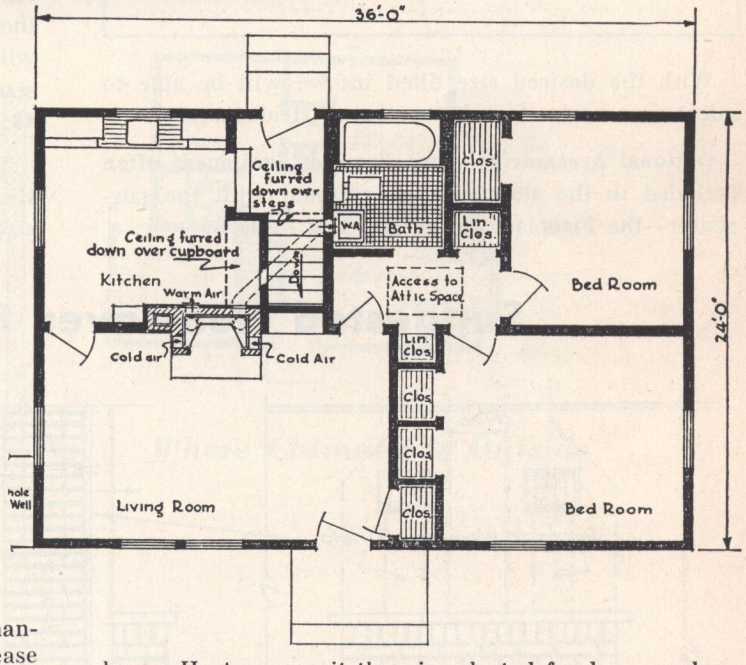
DIMENSIONS OF HEATSAVER UNITS

Heatsaver No.	Heatsaver Dimensions, In.							Shipping Weight
	A	B	C	D	E	F	G	
28	28½	27½	16	16	35½	23½	55½	375
32	32½	27½	16	16	39½	23½	55½	405
36	36½	27½	16	16	43½	23½	55½	435
40	40½	30⅛	18	18	55½	23½	66⅛	550
48	48½	30⅛	18	18	63½	23½	66⅛	620
60	60½	32¾	20	20	75½	27½	79½	900





Low cost home in Northfield, Ohio, where Heatsaver carries the whole heating responsibility, under ordinary conditions, serving bathroom and kitchen as well as living room.



Aids to Warmth—The patented triangular tube through the upper chamber, just above the damper, permits the air to pass freely over the heated metal surfaces leaving no dormant, hot air pockets. No additional electric fans are needed for free circulation of heated air.

The Warm Air Outlets are grilled openings, usually located near the ceiling. These grilles are of a plain, inconspicuous, small louver pattern, as are the inlet grilles located near the floor. Some installations have been made in which the upper outlets are masked by masonry and metal grilles omitted. Two such installations are pictured.

Cost of the Heatsaver—The masonry fireplace which you may be planning for your new home is likely to cost $150 to $250, including flue construction, but excluding the ornamental features of the mantel front. A Heatsaver of moderate size will increase the cost about $60, a small additional outlay, compared with the greater return in heat for equal fuel and the satisfaction of an evenly heated interior, through ensuing decades.

Construction of the Heatsaver—There has been no compromise in making the Heatsaver the strong, lasting unit that its purpose demands. It affords the builder a device with a minimum of complications, in which no insulation is required, with complete freedom from fire danger to the building. By adequate baffling and convection surfaces, the outer surface is kept at moderate temperature and hot air pockets avoided.

Selecting the Right Size—The appropriate size of Heatsaver for your own home will depend on several factors. In general there is much to be said for relatively smaller sizes, since the steel walls are likely to be in closer contact with the flame. If you plan to use wood as fuel, consider the length of the chunks in your available supply. Wood often calls for a slightly larger Heatsaver unit than is selected for homes where coal is the sole reliance.

The most important factors are the size of the room and the spaces you hope to heat. An oversize fireplace is not appropriate to a small room. A small fireplace may seem out of place in a large room. The table below embodies our suggestions for satisfactory relationship between room size and size of your Heatsaver Fireplace.

Table of Suggested Sizes

Size of Room in Feet	Heatsaver Size When Located on	
	Short Wall	Long Wall
10 x 14	No. 28	No. 28
12 x 16	No. 28 – 32	No. 32 – 36
12 x 20	No. 32 – 36	No. 36 – 40
12 x 24	No. 32 – 36	No. 36 – 40 – 48
14 x 28	No. 36 – 40	No. 40 – 48
16 x 30	No. 36 – 40	No. 40 – 48
20 x 30	No. 40 – 48	No. 48 – 60

How to Order a Heatsaver Fireplace

Many customers assume that the Heatsaver unit, alone, is all that they need to purchase, aside from mason materials, in securing a Heatsaver Fireplace. Actually there will be need for all the accessories listed in the adjoining column. To simplify ordering, we suggest the following:

THE DONLEY BROTHERS CO.
13900 Miles Ave., Cleveland

Ship to our order one No. ..... Heatsaver with Accessories.

Name and address .....

.....

With the desired size filled in, we will be able to select accessories to suit the size of Heatsaver.

Optional Accessories—Two items of equipment often included in the shipment are optional with the purchaser—the Fireplace Crane and Log Rests.

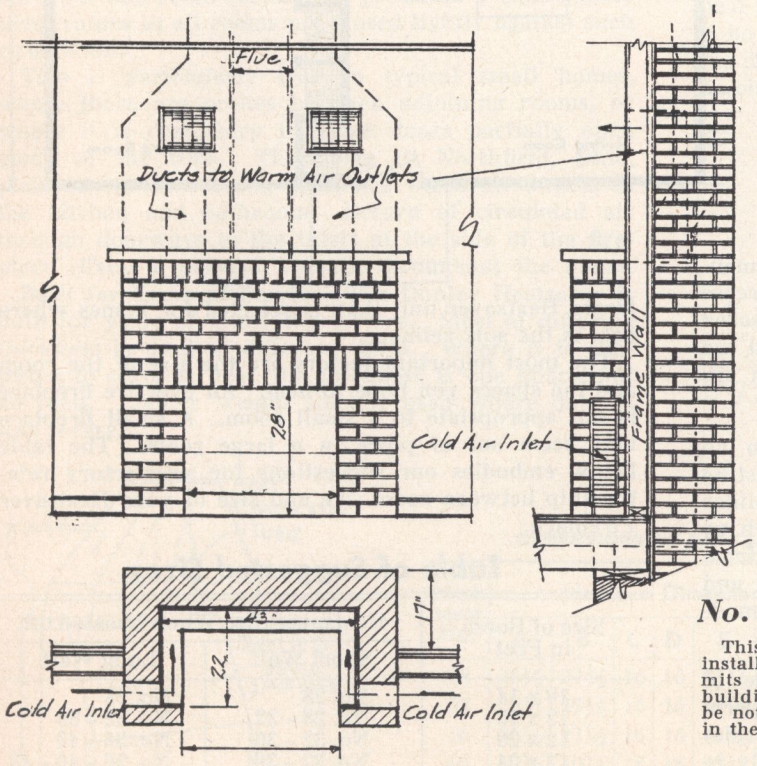
Articles that will be shipped when order says "Heatsaver and Accessories"

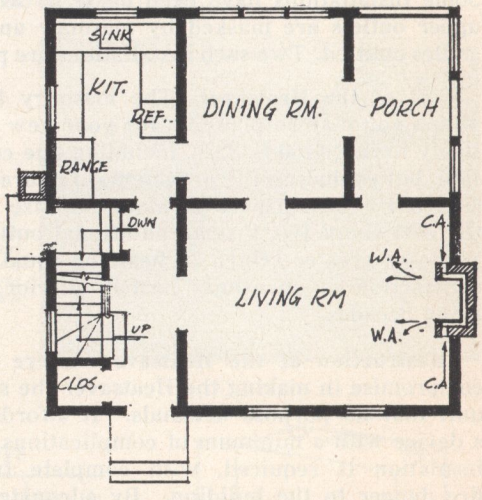
1	No. 32 Heatsaver (or size desired)
1	No. 58 Ash dump
1	12" x 8" Ash pit door
1	3 x 3 x $\frac{5}{16}$ x 42" steel angle
1	5 x 3½ x $\frac{5}{16}$ x 54" steel angle
2	No. 43 grilles
2	No. 46 grilles
2	24" lengths of galvanized pipe, K.D.
2	12" lengths of galvanized pipe, K.D.
2	Elbows of galvanized pipe
2	Outlet boxes

If a crane is desired, it should be specified in ordering, because that gives us an opportunity to weld lugs to the metal wall of the fire chamber, on which the crane will be held. There are four sizes of cranes—No. 1 for sizes up to 32"; No. 2 for Nos. 36 and 40; No. 3 for Size 48; and No. 4 for Sizes 54 and 60.

In ordering Log Rests, the 16-inch size suffices for all Heatsaver units but the No. 60, which takes the 20-inch size.

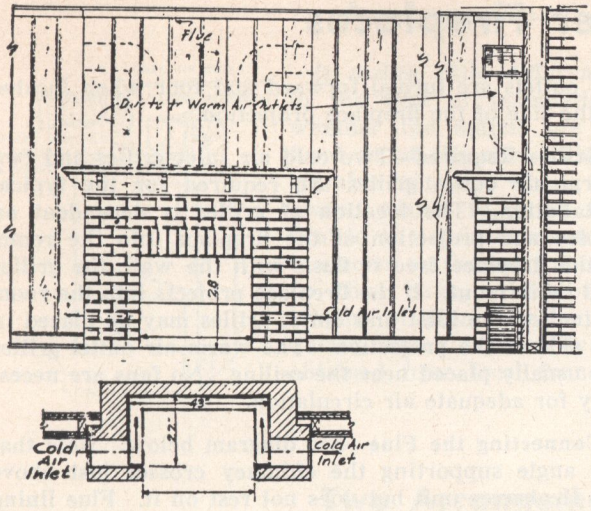
Suggested Heatsaver Fireplace Designs

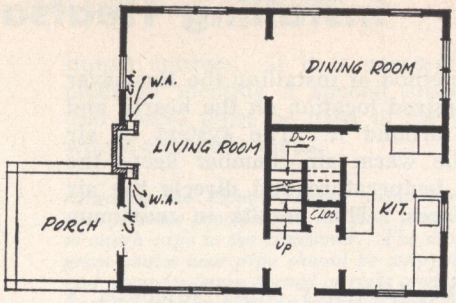




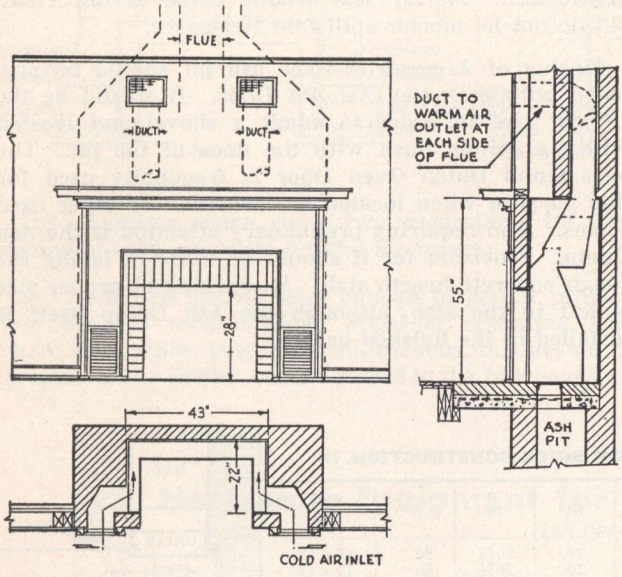
No. 1 Where Fireplace Is Lacking

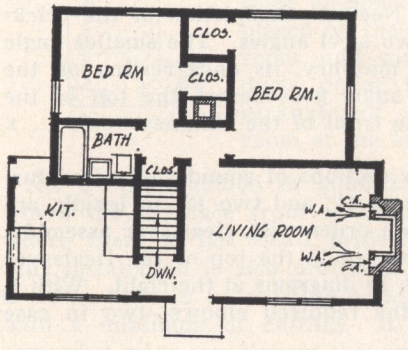
This design is well adapted to cases where it is desired to install a fireplace in a standing home which has none. It permits installation of a flue entirely outside a frame wall, and building a fireplace with a minimum of cutting. The flue, it will be noted, is sloped backward, while heating ducts are carried up in the masonry and turned forward.



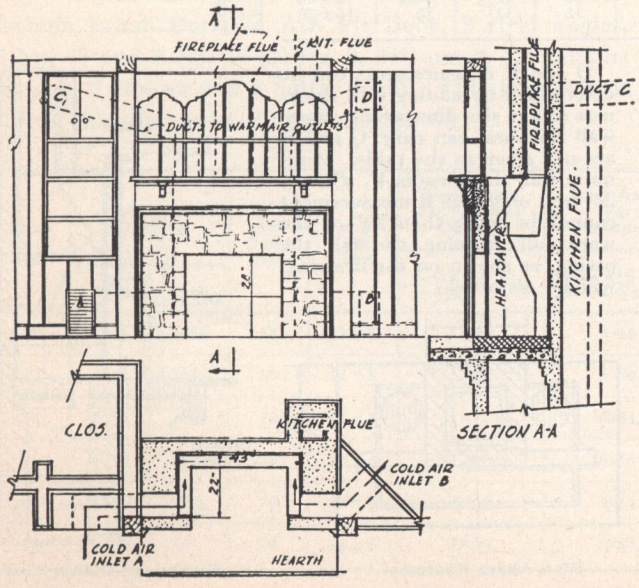


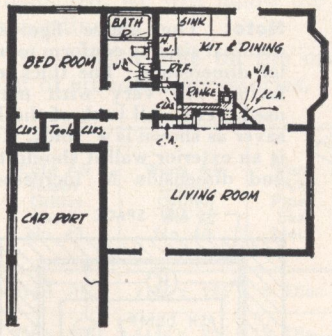
No. 2 Where Room Permits Projection





No. 3 Where Chimney Is Outside





No. 4 Heating Adjoining Rooms

Installing Heatsaver Fireplaces

The recommended method of installing the Heatsaver is to place it in the desired location on the hearth and build the brickwork around it. The system of air directing sheets in the warm air chamber keeps the outer shell at a safe temperature and directs the air over the heated surfaces. This results in maximum efficiency of the unit.

Locating the Hearth—Like any other fireplace, a Heatsaver may project more or less from the surrounding wall. It may be practically flush, as in Plan No. 1, or projected as in No. 2. Projection has a possible effect on the arrangement of cold air inlets. The remodeled Heatsaver has the cold air inlet located forward, as shown, for most effective heating results. Variations from the typical, usual, installation should maintain the same area of air passage as indicated by the size of opening in the casing.

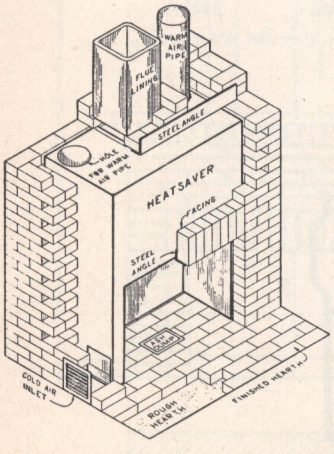
Two Steel Angles Needed—Completion of the brickwork will call for two steel angles. The smaller angle supports the breast masonry, its ends resting on the jambs. The larger angle goes across the top of the unit and supports the front of the chimney.

Outlet Pipes—Four sections of round galvanized furnace pipe, two of them 24″ and two 12″ in length, are regularly furnished on order with Heatsaver assembly. They are to be connected to the top of the Heatsaver in the manner shown in diagrams at the right. With it also are furnished the required elbows—two in case the outlets are turned forward and four when located at the side of the fireplace projection.

Grilles Required—Two cold air inlet grilles and two warm air outlet grilles are required for the typical installation. The location of grilles is dependent on choice and projection of the fireplace into the room. If the fireplace face is flush with the wall, the grilles will be in front. If the fireplace projects into the room 13 inches, the inlet and outlet grilles may be placed in the side of the projection. The warm air outlet grilles are usually placed near the ceiling. No fans are necessary for adequate air circulation.

Connecting the Flue—See diagram below. Note that the angle supporting the chimney crosses just above the Heatsaver unit but does not rest on it. Flue lining should rest on prepared brick ledges, not on the collar of the unit. Mortar seal around collar is important, but do not let mortar spill into Heatsaver.

Placing of Accessories—The ash pit should be provided with a Donley Ash Pit Door. It should be the 12″ x 8″ size in order to admit a shovel and located with its bottom flush with the floor of the pit. The ornamental Dutch Oven Door is frequently used for this purpose when located in recreation or other used rooms. Also requiring preliminary attention is the Ash Dump. Provision for it should be made in laying the rough concrete hearth slab. An opening of proper size is left in the slab, although the Ash Dump itself is installed in the finished hearth.

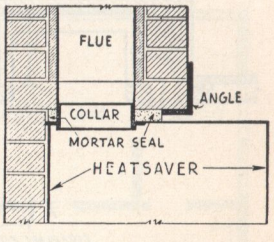


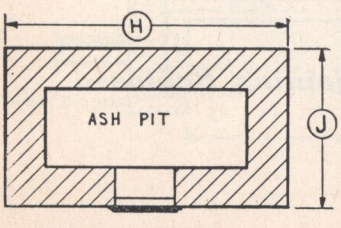
ROUGH MASONRY DIMENSIONS FOR BRICK CONSTRUCTION, IN.

No.	H	J	K	L	M	N	P	Flue Size
28	52	32	36	24	28	26⅔	56	12 x 12
32	56	32	40	24	28	26⅔	56	12 x 12
36	60	32	44	24	28	26⅔	56	12 x 12
40	72	32	56	24	28	29⅓	66⅔	12 x 16
48	80	32	64	24	28	29⅓	66⅔	12 x 16
60	92	36	76	28	32	32	80	16 x 20

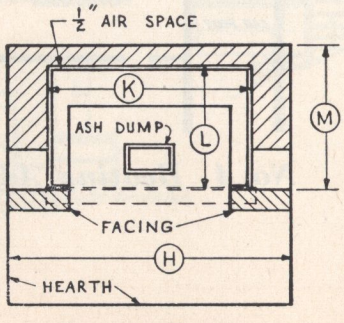
Note: The above figures are nominal sizes to conform to modular dimensions. The thickness of facing will vary with material used. The wall back of the Heatsaver as shown is 4″ thick. If this is an exterior wall it should be 8″, and dimension M increased 4″.

Q and R measurements can be determined by adding wall thickness to flue size dimensions. Since wall thickness can vary, Q and R are not given in the table. Minimum wall thickness is 4″. On the 28″ unit only, the R measurement cannot be more than 20″ or the warm air opening through the casing, as shown on the drawing, will be distorted.

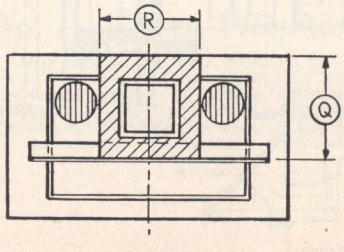




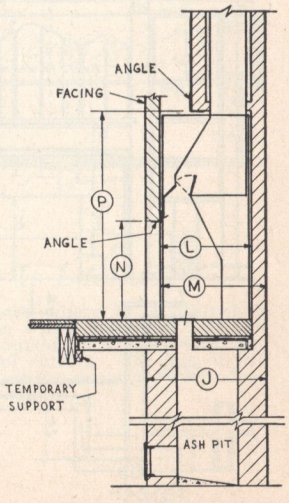
Plan Below Hearth



Plan Above Hearth

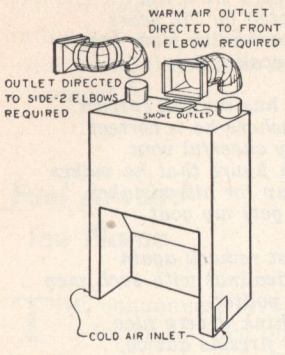


Plan Above Heatsaver



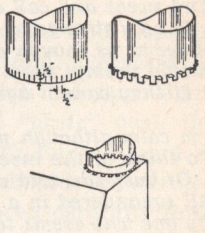
Section on Center Line

Arrangement of Warm Air Outlets

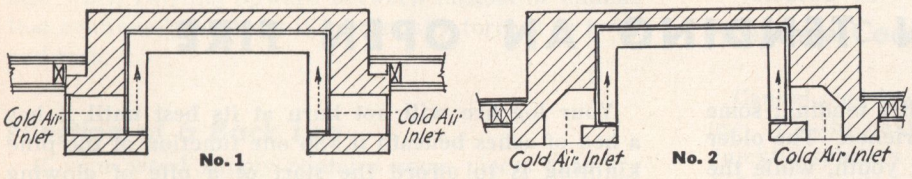


It makes little difference, in the task of installation, whether the outlets are in front or at the side. There are also instances where the owner wishes to direct the heat to an adjoining room or to a room on the story above. In that case, additional lengths of pipe may be required, which can readily be obtained from local furnace supply sources. If it is necessary to use rectangular pipes in meeting a special situation, it is suggested that round pipes be used to carry heated air to point where change is made.

Attaching the Pipes— *Those unfamiliar with furnace practice will not find it hard to attach pipe to the Heatsaver. The diagram shows how pipe should be snipped and alternate leaves turned at right angles. Seat the pipe in opening so that it rests on bent leaves. Reach down through the pipe and bend the straight leaves inside the unit, so that they have a tight contact with the top.*



Two Arrangements of Cold Air Inlets



The diagrams above show two suggestions for the placing of cold air inlets for the Heatsaver.

No. 1—Where wall is large enough to permit projection into the room without apparent crowding and where inlet grilles must be inconspicuous, this design is recommended. Grilles may be placed in the baseboard at the sides of the fireplace or, under some circumstances, they may be placed on the opposite side of the room and air supplied through ducts under the floor. Another arrangement draws air from a room at the back of the fireplace.

No. 2—This method of admitting cold air is used where the fireplace front is flush with the wall or where there is but small projection into the room. This installation is also preferred where the fireplace is being built in an existing building and constructed with a minimum of cutting. It renders the grilles somewhat more conspicuous than in Arrangement No. 1.

Necessary Equipment for Installing Heatsaver Fireplace

(All Dimensions in Inches)

Standard accessories shipped on an order for Heatsaver of given size, unless otherwise noted on the order, include 1 Ash Dump, 1 Ash Pit Door, 2 steel angles, 2 No. 43 and 2 No. 46 grilles, 2, 24″ and 2, 12″ lengths of pipe, 2 elbows and 2 outlet boxes. This is sufficient for an installation as shown on Page 46.

Because of occasional variations in installation this list may need to be changed, and we are always glad to suggest ways to meet unusual conditions. If a sketch is furnished, we will figure the piping necessary and ship accordingly.

Be sure to note on the order any changes from the list of standard accessories.

Heat-saver No.	Masonry Opening		Ash Dump No.	Ash Pit Door	Steel Angle For Fireplace Opening	Steel Angle For Chimney	Cold Air Intake Grilles Use 2 No. 43	Warm Air Outlet Grilles Use 2 No. 46	Warm Air Pipes See Note	Warm Air Outlet Boxes Use 2
	Wide	High			C-3 x 3 x 3/16 D-3½ x 3 x ¼	A-5 x 3½ x 5/16 B-6 x 4 x ⅜				
28	28½	26⅜	58	12 x 8	C-36	A-46	9⅜ x 9⅜	11⅜ x 9⅜	8 Dia.	10 x 8
32	32½	26⅜	58	12 x 8	C-42	A-50	9⅜ x 9⅜	11⅜ x 9⅜	8 Dia.	10 x 8
36	36½	26⅜	70	12 x 8	C-42	A-54	9⅜ x 9⅜	11⅜ x 9⅜	8 Dia.	10 x 8
40	40½	29⅛	70	12 x 8	C-48	A-66	9⅜ x 11⅜	13⅜ x 10⅜	9 Dia.	12 x 9
48	48½	29⅛	70	12 x 8	D-54	A-74	9⅜ x 11⅜	13⅜ x 10⅜	9 Dia.	12 x 9
60	60½	32	70	12 x 8	D-66	B-86	9⅜ x 11⅜	13⅜ x 10⅜	9 Dia.	12 x 9

Grilles — Inlet Grille No. 43: stamped steel louver type which conceals interior. Outlet Grille No. 46: stamped steel and metal frame for attaching to outlet box. All grilles regularly furnished with gray prime coat.

A Plea for Peaceful Firesides

by the

Donley Observer

The way men quarrel over fires
And swear and call each other liars
Is very strange to me.
It seems as though a little sense
Would prompt them to some tolerance
If they cannot agree.

I'm calm although my blood will boil
To think of the invested toil
Of busy saw and ax
All squandered in a measly flame
By one who seems to feel no shame
For methods sadly lax.

I've told my neighbor all along
His way of building fires is wrong,
But will he change his mind?
A being who is more perverse
Or one who starts a fire worse
I never hope to find!

My method when I build a fire
I learned quite early from my sire
And he in turn from his.
Procedure tested by the years
Has earned immunity from sneers;
It's right because it is.

My neighbor has my full respect.
On subjects where he is correct
He wins my cheerful vote.
The stubborn figure that he makes
In standing up for his mistakes
Is all that gets my goat.

And so I must remark again
That in my dealings with such men
I try to be polite;
But do not think it very nice
To spurn my fireside advice,
When I am plainly right.

HINTS ON TENDING AN OPEN FIRE

SOME people have an instinct for fire tending; some gain fire knowledge by slow experience. The older generation had fire duties from early youth, while the current crop of householders includes many who never acquired practice until a fuel shortage drove them to fire-lighting duties.

For their benefit we may say that the 19th Century chore boy learned three stages in producing a fire, represented by the paper, the kindling wood and the actual fuel which might be coal or hard wood.

The match produced the flame; the paper spread it; the kindling held it and produced heat enough to ignite the fuel with a fire that would last.

The Question of Draft

Tight homes have made the draft question so acute of late that it is a good thing to determine whether there is a decided down-draft in the chimney before starting. Wet a finger and hold it under the fireplace throat. If it is cold on the upper side, the draft is coming down.

This condition is discussed on page 60 under the heading of Lack of Combustion Air. Occasionally a wrongly built fireplace can, by careful treatment, be made to burn tolerably. Raising the fire by use of a fire basket instead of burning it on the hearth has corrected some. A small start of free burning fuel—not a big volume of smoke with small heat—will more easily start the up-draft.

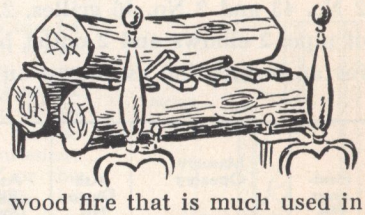
Your log fire will not burn at its best until it has a bed of ashes beneath it. So one function of the pine kindling is to afford the start of a pile of glowing embers. If you build fires daily, leave some of yesterday's ashes, brushed together, as a foundation for today's bed of coals.

Laying the Fire

Much of the literature of New England must have been produced in front of log fires, if we draw inference from continual allusions to the fire and to fire lighting. There was (and is) a positive ritual of back-logs and fore-logs, of preferences in wood.

Let us see if we can reduce these dogmas to general principles. We have seen that a fire must (1) be lit, (2) be spread, (3) be held until general ignition takes place. The final stage of fire tending is to conserve it and keep the fuel from burning up too rapidly.

English Fire Laying Method

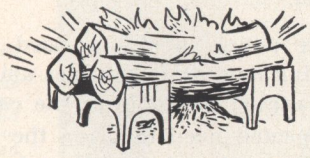


A method of laying a wood fire that is much used in England is called to our attention by an architectural friend in New York. Newspapers are first crumpled between the log rests. Then two logs are laid parallel over the paper. Kindling is laid across these logs, at intervals of about an inch, with a few sticks stuck downward between the logs into the paper. Then the third log is placed on top, parallel with the bottom logs. This arrangement creates a quick flame with good draft between the logs.

"I think," he writes, "that the English have devel-

oped this system because (aside from their being a very civilized nation) wood is scarce and it is considered essential to have a nice, newly laid fire blazing in the hall and guest room immediately a visitor arrives —as essential as their little courtesy of polishing shoes overnight."

Fuel Around the Flame



THE commonest error of neophytes with a fireplace is to try to burn one log of wood at a time. Even two logs are apt to snuff out. Three units in your wood fireplace represent a practical minimum.

Good fire builders recognize that the growing flame needs the protection of fuel around it—that it thrives best when twisting upward between faggots or chunks that continually obstruct it, continually force it to twist and turn.

Function of a Back Log

If your wood supply contains some pieces that are hard to burn, perhaps green—do not be disappointed. They make fine backlogs. The backlog lies against the back of the fireplace. You lean split pine or faggots against it in kindling your fire. It makes a counter-surface for livelier burning wood and helps to hold the body of the blaze forward where it will do the most good.

Wood that is fairly green can be burned after the fire is well under way, especially if there is a good bed of coals. It should be split finer than is necessary with dry, seasoned wood.

Where Experts Differ

Some good fire builders lay their fires completely before applying a match, crumpling the paper and placing it at the bottom; then the kindling wood in loose array; then the solid fuel. If the job is done with care and discrimination, the flame will soon be creeping up through all parts of the mass.

There are others who light paper before they begin laying the sticks of kindling wood. They place each stick where it interrupts a tongue of flame, contriving small crevices to enclose it. Coal or wood fuel is added, a unit at a time. The man who does this loves to play with flame.

"Holding" a Wood Fire

Contrary to general belief, a wood fire can be held overnight—sometimes revived after a day or two of inattention. This is important to people who are heating homes with Heatsaver Fireplaces and relying chiefly on a wood supply.

Success is wholly a matter of a bed of ashes and embers protecting the partially burned wood from drafts and conserving its heat.

Building a Coal Fire

Coal is a more stable fuel than wood and requires less attention, although harder to hold overnight in an open basket. It is kindled in much the same manner as wood. If you have a good "grate" coal, the blaze will be well established in 15 minutes, but it should not be crowded. The flue should be warmed gradually and each piece of coal placed carefully until a lively coal flame has been achieved.

Choice of Fireplace Coal

Cannel coal is one of the popular coals for fireplace use. It is the next thing to an oil-bearing shale, ignites quickly, sputters a good deal and makes a lot of ash. A fire screen is good caution when burning cannel but a screen diminishes heat and mars enjoyment.

Kentucky coals have earned a fine reputation as a fireplace coal. It ignites easily, burns brightly with a minimum of fine powder-like ash without clinkers. There are other kinds of bituminous coals that burn acceptably in open fires.

There is such a thing as a hard coal grate. Coke can be burned in a fireplace if necessary. Neither is preferred in the typical fire basket. Both require to be enclosed on four sides with good draft from below, deep beds of coals being best.

Kind of Wood to Burn

Wood merchants in central-eastern localities report preference for beech, birch, hickory, apple and maple. Many other woods burn acceptably. Oak is excellent fuel; pine and other evergreen rather too free-burning for other than kindling.

Apple and hickory give pleasant aroma. Hickory is preyed upon by carpenter bugs, and their offspring may infest the premises where it is used. Apple is less abundant than it would be if orchardists replaced trees past bearing. Birch dresses the fireplace handsomely, but burns rather too fast. Beech gives a fine, steady, lasting flame.

Regarding southern woods, J. Claire Byrne of Ft. Worth, Texas, writes that his customers like a mixture of half oak and half cedar, the cedar lighting quickly, while the oak yields a lasting flame. He also sells straight oak, elm, cedar and birch. Walnut, pecan and apple are good but not abundant.

Synthetic Wood

Large lumber interests are back of the synthetic logs, now offered in packaged form. They consist of sawdust and chips bonded together under pressure. The reputation of their manufacturers is pretty good assurance that they make acceptable fuel.

Igniting Devices

To many city dwellers, the question of kindling wood is quite as acute as that of getting firewood. To them the mechanical lighting device makes an appeal.

Such a device is shown on Page 68. Sometimes they are called Cape Cod Lighters. A device with a metal handle and a head of absorbent fireclay rests in a small kettle of kerosene. Removed and lighted, it acts as a wick and ignites the coal or wood used as fuel. The absorbent fireclay becomes heated in the process and, if the fuel does not immediately ignite, do not immerse lighter in the oil immediately or oil may explode.

Gas igniters usually consist of sections of pipe, enclosed at the end and perforated to emit jets of gas. They are connected with a supply line and should have a valve outside the fireplace opening.

Such devices do not build beds of embers as does wood kindling. If ashes are left on the hearth, they tend to clog the gas outlets. Trying to light logs without contact with ashes tends to be a slow process. Gas lighters are the one resource for many, but they often present difficulties.

Use of Fire Tools

It is a sign of bad fire tending to lift a coal hod and throw a large part of its contents on the flame. Better to place each chunk where needed with the tongs, or to lift out moderate-sized shovelfuls with the fire shovel.

The poker should be used to rouse the flame by opening new draft passages among the embers and by rearranging the fuel. In the case of wood fires, there is repeated need to bring the unburned ends of logs into the center of the fire, and a poker, or tongs, makes easy work of this task. A brush is useful in cleaning the hearth or keeping the ashes in a neat pile. Some people like to use a bellows as a persuader for a lagging flame.

Operation of Damper

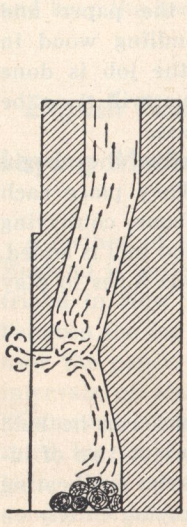
Make sure that the damper is wide open before you light your fire. Many fireplaces are operated with dampers constantly open. Dampers do not have to be constantly opened and closed in order to be of great value in promoting smooth discharge of smoke and arresting down-draft.

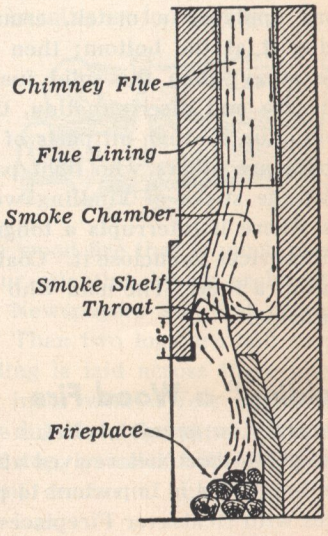
When the fire builder has mastered other features of fireplace operation, he can begin experimenting to see how much his damper opening can be cut down, with his fuel, and save heat while discharging all the smoke. When only a bed of glowing coal remains, the damper can be brought nearest to a closed position. But be sure to open it before refueling with smoke-producing fuel.

U. S. Government Recommends Smoke Shelf

PERHAPS the commonest error in fireplace construction is the omission of the smoke shelf. Some mechanics argue vigorously for a straight, smooth passage — overlooking the fact that such a passage brings down-draft without offering any particular aid to up-draft.

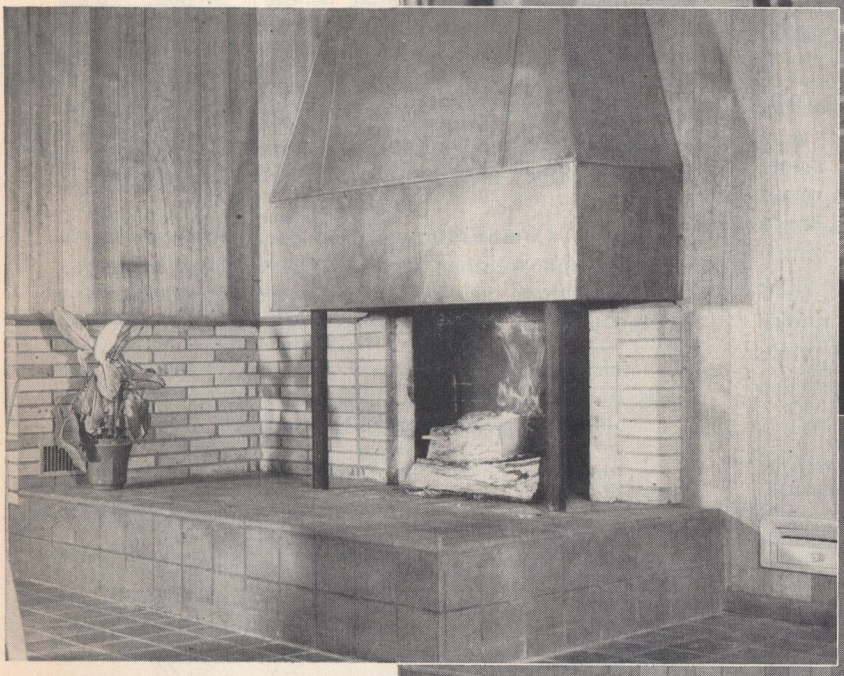
These two diagrams from a publication of the U. S. Government on fireplace practice show the wrong and right ways to plan a fireplace interior. The one at the left illustrates wrong practice—the smoke being blown into the room by down-draft. The diagram at the right shows correct practice (as advocated in the Donley plans) with a smoke shelf on which the down-draft is arrested. The diagram shows also how the valve plate of the damper helps to form a pocket within which the down-draft eddies and turns upward, joining the rising current of smoke.



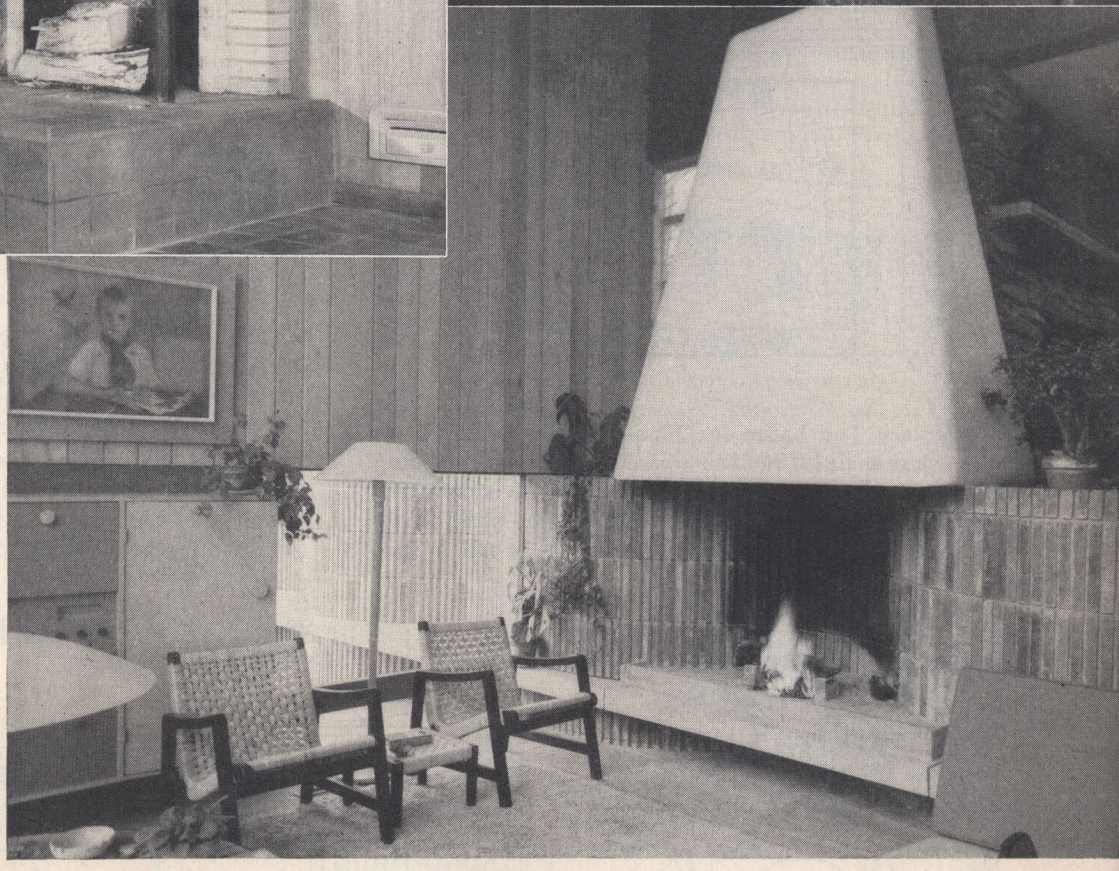


HOODED FIREPLACES

The hooded fireplace, one of the earliest forms, historically serves in many interesting variations. The one at the upper right has Guatemala as its inspiration. Mr. and Mrs. Gordon Hann sought to reproduce a corner fireplace with a raised hearth of a type they observed on a Central American visit. It occupies a corner of the master bedroom of their Geauga County, Ohio, home.



Mel A. Querry is the owner of this excellent hooded fireplace, which follows the general lines of the Donley Three-Way design, as noted by the architect, Robert Major, of 338 Brotherhood Building, Kansas City, Kansas. An outdoor No. 23 Range is located in the rear and employs the same chimney stack.



The home of Architect Robert Little, in an easterly suburb of Cleveland, has won such acclaim as an example of contemporary planning that it had many week-end visitors for months after completed, and "Life" devoted several pages to it in color. The original hooded fireplace shown here is repeated on the cover.

FIREPLACE DIFFICULTIES

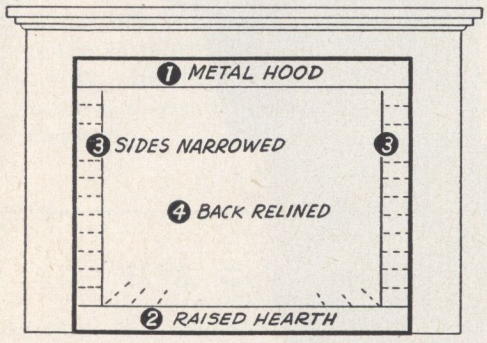
Their Prevention, Diagnosis and Treatment

PROPERLY constructed fireplaces burn warmly, cleanly, safely. Those owners who "guess all fireplaces smoke" are making the wrong guess. Yet faulty construction is common enough so that the Donley Brothers Co. is being constantly consulted, by letter or otherwise, as to the causes of troubles with fireplaces. Investigation nearly always reveals some basic fault in planning, or some mistake of execution.

Fire Hazards—Fire-resisting material should always be installed between the chimney and wood members. Flue lining, properly cemented, is an excellent source of fire protection and its use is directed by most building codes.

Dummy Fireplaces Dangerous—Besides imparting an atmosphere of fraud, the dummy fireplace is a source of positive danger. Sometime, some day, somebody will try to build a fire in it. The minimum result is a house full of smoke—the maximum is need for a new house.

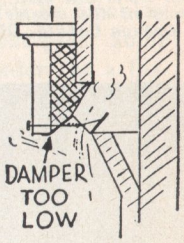
Causes of Smokiness—The great majority of complaints about fireplace operation are based on smoky operation. Here are some of the conditions and remedies that relate to smokiness.



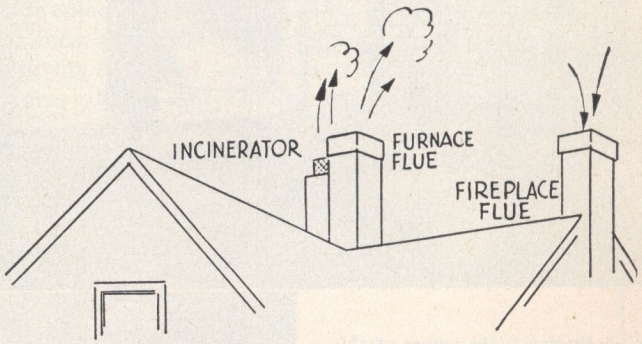
Four ways of reducing fireplace opening.

Fireplace Too Large for Flue—The flue area should be not less than 1/12 of the area of the fireplace opening. Where too small to carry off products of combustion, remedy may be found in reducing the size of the opening. Some corrective workers (1) install a shallow hood of metal beneath the fireplace breast. This also helps in cases where the damper position is too low. Other ways of reducing the opening are (2) to raise the hearth by laying one or two courses of brick over the old hearth. Where drastic reduction is needed (3) narrow the sides of the opening and/or (4) reline the back.

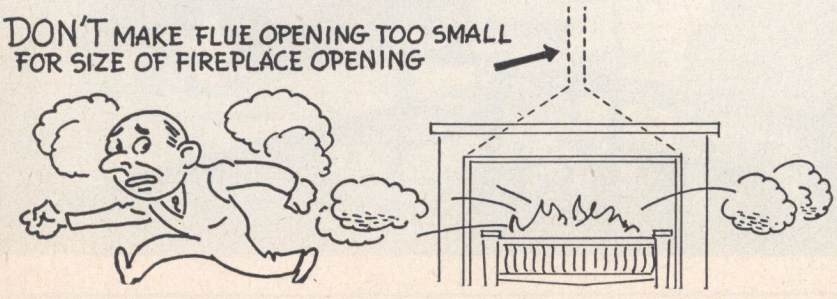
Damper Too Low — Smokiness often ensues because the damper has been installed with its flange at the lower level of the front wall. The remedy is to take out brickwork, raise the damper to a position four to six inches above the opening and realign the rear wall to conform with the higher position.



Lack of Combustion Air — Recent innovations in caulking and weather stripping have made homes so tight that there are no air inlets to provide air for oxygen and for draft, such as every fire needs. The result is that the unlighted fireplace becomes an inlet for outdoor air. If the furnace, the cooking range and incinerator are lighted, there is a steady current of air down the fireplace chimney.

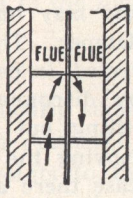


Then if the fireplace is lighted, the draft down the chimney is pretty sure to drive smoke out into the room. We have repeatedly investigated complaints of smoky fireplaces which proved to be due to lack of



ventilation for the interior as a whole. Often opening a basement window an inch or two would cause the fire to burn brightly. The only answer to this type of fireplace trouble is ventilation—not merely for the fireplace, but for the furnace, incinerator, range and for respiration for the family. It is a poor sort of progress that excludes air from interiors where people are supposed to live.

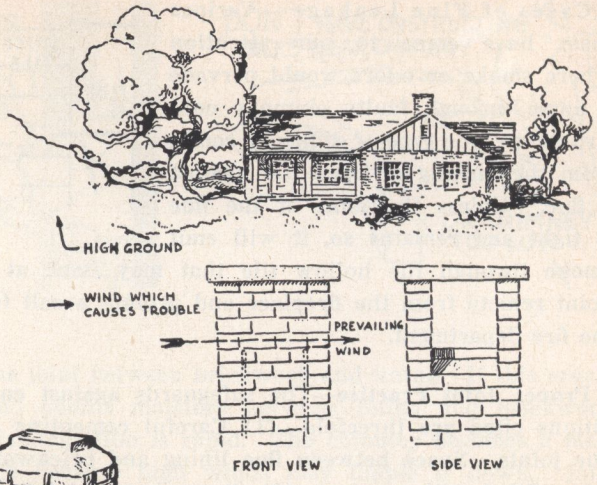
Leakage From Flue to Flue — Sometimes smoke will issue from a fireplace that has no fire in it. Search will show that flues have been placed side by side in the same stack without cementing the joints between units of flue lining. If a furnace fire is burning briskly, there is apt to be down-draft in the fireplace flue, for reasons stated. Smoke will be sucked across through the uncemented flue lining joints and descend (providing principles outlined above are disregarded)—coming out of the fireplace. The remedy is to tear out the chimney and join linings properly. Staggering units of the lining is a help.



Use of Perforated Brick—Where workmanship is good, there can be no objection to the use of perforated brick in chimney work. Where a job is carelessly done, the fact that brick is perforated may account for the emission of smoke at a point that cannot otherwise be accounted for. The fault, in such cases, is with the workmanship, not the material.

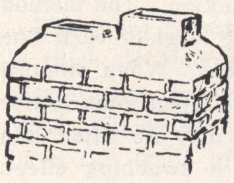
Leakage Impairs Draft—Where flue joints are uncemented and mortar in surrounding brickwork disintegrates, there is often a leakage of air into the chimney. This prevents the chimney from exercising the draft possibilities which its height would otherwise assure. The case is similar to that of trying to smoke a cigarette with a hole in the paper. Thorough pointing of the brickwork usually effects a cure.

Wind Deflected Down Chimney — The surroundings of a home may have a marked bearing on fireplace performance. If located at the foot of a bluff or hill, or if there are high trees close at hand, the result may

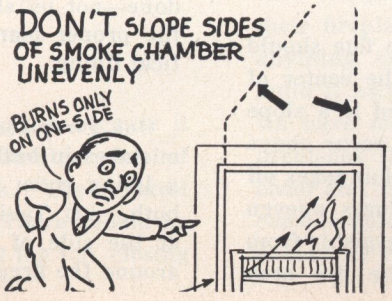


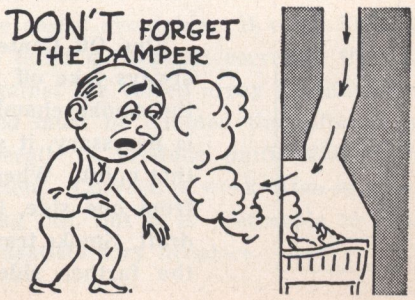
be to deflect wind down the chimney in heavy gusts. A near-by high building has been known to produce the same effect. The detail of a hooded chimney below the sketch of a house shows a common and efficient way of dealing with this difficulty. It may also be mentioned that carrying the flue lining a few inches above the brickwork, with a bevel of cement around it, is a recognized means of promoting clean exit of smoke from the flue. It minimizes wind eddies. The cement bevel also causes moisture to drain from the top and prevents frost troubles between linings and masonry.

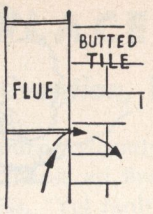
"Pouring" From Flue to Flue—We have spoken of the case where down-draft from interior suction pulls smoke from the top of one flue down an adjoining flue. Related to this is the case where vertical wind currents



force smoke down an inactive flue as it emerges from an adjoining flue. One way to treat this is to carry the flues to different heights above the masonry. In other cases, multiple flues are capped, as shown. Note the bevel of cement which helps drainage and promotes clean emission of smoke.

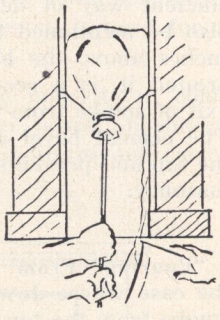






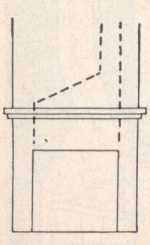
Cases of Flue Leakage — Various cases have come to our attention where smoke or odors would pervade a home through faulty chimney construction. One type of difficulty comes from the butting of open tile against a flue. Unless the joint of the flue is tight and remains so, it will emit smoke through the hollow tile that may issue at a point remote from the fireplace and prompt a call for the fire department.

Proper Joint Practice—The safeguards against conditions cited are threefold—(1) Careful cementing of flue joints. Space between flue lining and brickwork being filled with mortar. (2) Staggering of joints in adjoining flues, or at least four inches of well-cemented brick between flues. (3) Surrounding brickwork properly laid and joined.



Method of Sealing Joints — A method of closing uncemented flue joints without tearing out the chimney has been used with success in some instances. It involves the use of a traveling plug and fairly thin grout. As a plug, a canvas bag is sometimes employed, stuffed with rags or papers and weighted with bricks in the bottom. When lowered into a flue from the top, by means of a line or pole, it should fit fairly tight, but not too tight for motion. The method of use is to stop it just below the level of each flue joint and pour grout down the flue. When stopped by the plug, the grout flows into the open joint. After the joint appears filled, the plug may be lifted and lowered a few times, producing a swabbing effect. Then it is lowered to the succeeding joint and the operation repeated.

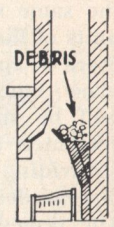
This operation should be carried out with careful eye to conditions in the fireplace below. If too much grout is passing the plug, it may pile up on the smoke shelf, drain into the fireplace and deface it, or, in hardening, may impair the working of the damper.

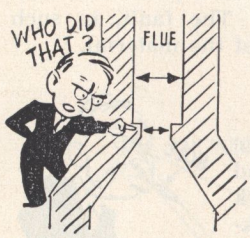


Flue Off Center—The flue should always take off from the center of the smoke chamber, and if a slope is necessary, it should occur above that point. Where the flue takes off from one side, it produces uneven draft. Smoke travels sluggishly from the farther side of the fire area and is prone to eddy out into the room. Correction calls for rebuilding the smoke chamber and realignment of the flue.

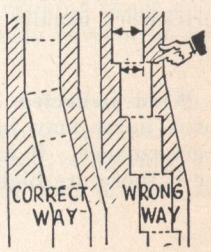
Double Use of Fireplace Flue—Where kitchen stove, furnace or other appliance uses the same flue as the fireplace, there is always a liability of smoking and draft disturbances. Each fireplace should have its own flue.

Flue Choked by Debris—The commonest form which this difficulty takes is the deposit of mortar, carelessly dropped down the chimney during construction. If the flue is straight, it generally lodges on the smoke shelf and may impede the working of the damper. This condition may be corrected, in case of the Donley Damper, by disconnecting the control device, lifting out the valve plate and removing the debris through the fireplace throat. In case there are turns in the flue, debris may lodge at the angle and such debris is sometimes found to include broken pieces of brick and flue tile. In some instances such obstructions can be dislodged from above by a pole or weighted line and debris removed from the smoke shelf. More often it involves tearing out.



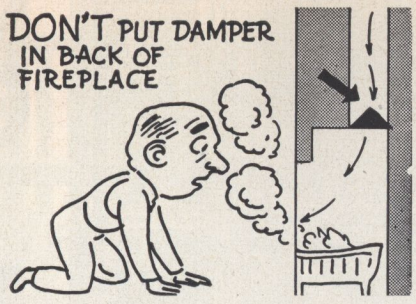


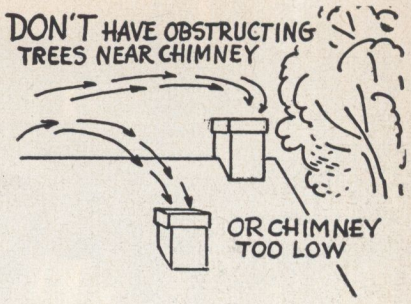
Choking at Base of Flue—The upper course of brick in the smoke chamber should offset just enough to afford support for the flue lining, without impinging on the area of the opening. Frequently it is found that they have been set in such a way as to reduce the area of the flue. The only remedy involves removing the obstruction. The same effect might be produced by a cap that chokes the outlet.



Flue Lining Out of Line — Sometimes careless masons fail to set flue lining with due alignment, leaving uneven joints, prone to cause leakage of smoke and fumes. In some instances where a slight change of direction in the flue is necessary, it is done—not by sloping the flue in the proper manner—but by successive offsets of vertical lining.

One Fireplace Below Another — Two fairly common mistakes in building a recreation room fireplace below a living room fireplace are — (1) Using one flue for both. (2) Taking off the flue for the lower fireplace at the side of smoke chamber, in order to carry it around the fireplace above. The lower fireplace should

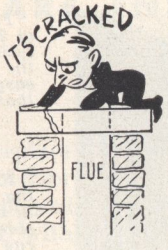




be offset sufficiently so that a flue from the lower fireplace by-passes the upper one and reaches the chimney stack by a slope of not more than 7 inches to the foot. See design on Page 11.

Ash Pit Clogged—Difficulty sometimes encountered in removing ashes from ash pits points to the need of making pits with uniform sectional areas and smooth walls. When pits or chutes are offset in passing a fireplace on a lower floor, all possible care must be taken to avoid roughness or sharp changes of direction. Wall leakage, particularly in the basement wall, permits water to seep in and convert ashes into a soaked and tightly packed mass. The ash pit door should be centered at the base of the pit and be large enough to afford access, by poker, in freeing clogged masses near the base. More refractory conditions may call for tearing out masonry and treating obstructions.

Moisture and Frost Troubles—Because chimneys are subject to contrast of inner and outer temperatures, there is more tendency for mortar to crack and disintegrate than in wall masonry. Natural gas fumes, which form a vapor, may escape through uncemented flue joints and augment the effect of moisture. Cottages left vacant during the winter are particularly subject to moisture and frost troubles.



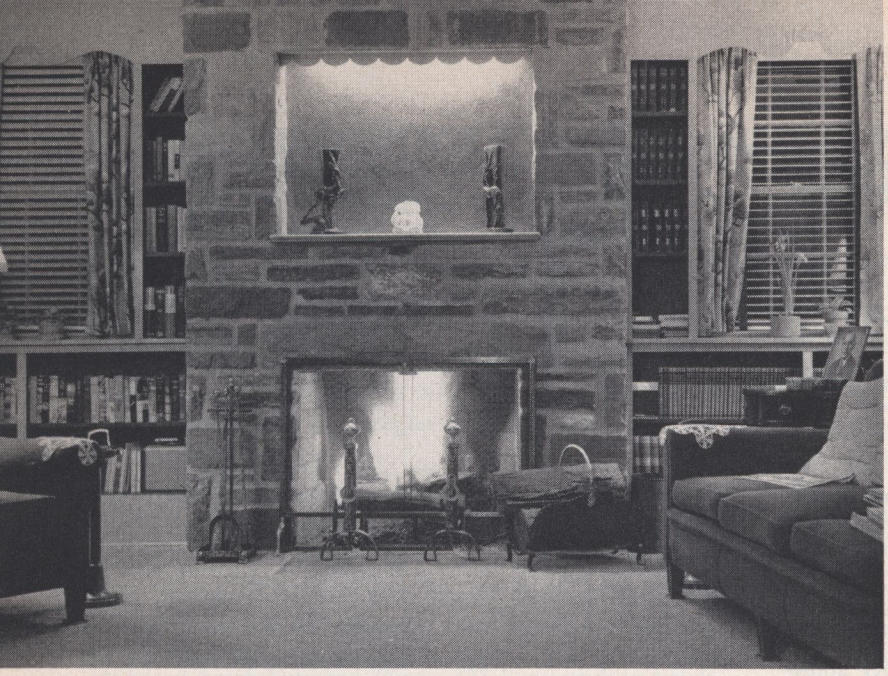
Moisture in masonry is always a menace, because it freezes in cold weather and causes disintegration of mortar and spalling of the brickwork. The greatest source of danger is the chimney top. There should be a smooth, impervious bevel of cement at the top, closing the joint between brickwork and lining. If this cracks and admits moisture between lining and brickwork, disintegration is rapid. The chimney becomes a menace because high winds may topple it down. Joint leakage is a lesser evil. Capping the flue as illustrated on Page 17 is a safeguard against moisture entering the inside of the flue.

Chimneys should be kept under observation for the need of pointing and their tops examined periodically. Mastic pointing is more effective than cement pointing because mastic adheres better and repels water. Donley Caulking Compound makes an excellent pointing material.

Use of Fire Basket—Where a fire is built directly on the hearth, it has somewhat the effect of increasing the size of the fireplace opening and a larger flue may be desirable. Conversely, installing a fire basket may cure trouble from an inadequate flue.

Where the breast of the fireplace is thick, trouble may result from placing the basket too far forward. In general it is safest to have the front of the basket no farther forward than the rear line of the breast. A little experimenting in basket position will show where it yields the most heat with minimum risk of smoke eddies.

Troubles Generally Avoidable — With comparatively rare exceptions, the troubles that owners suffer from their fireplaces are easily avoidable. It costs little, if anything, more to build a fireplace correctly than to build it badly. Against the varied array of difficulties we have mentioned must be counted the millions of fireplaces that operate to produce uniform warmth, cheer and contentment. Corrective work often involves considerable tearing out, but it is preferable to long endurance of an unsatisfactory fireplace.

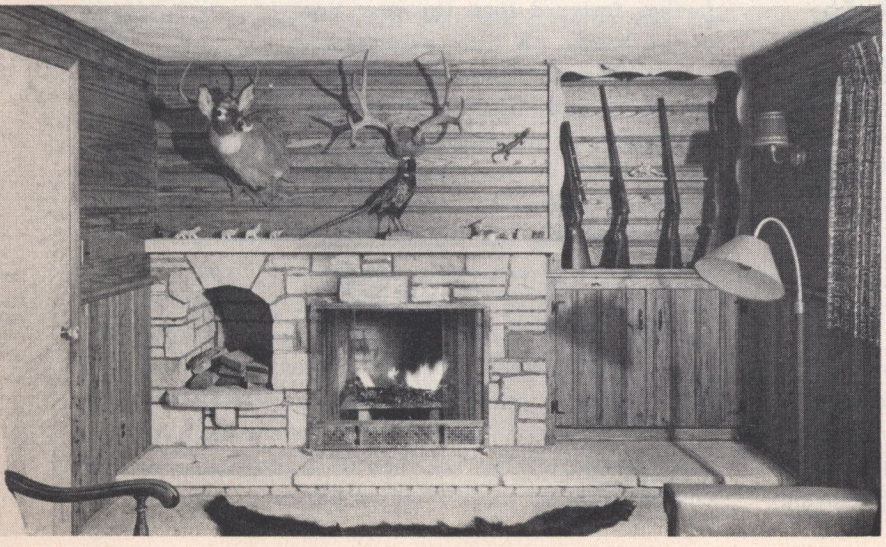


WHERE IDEAS RULE

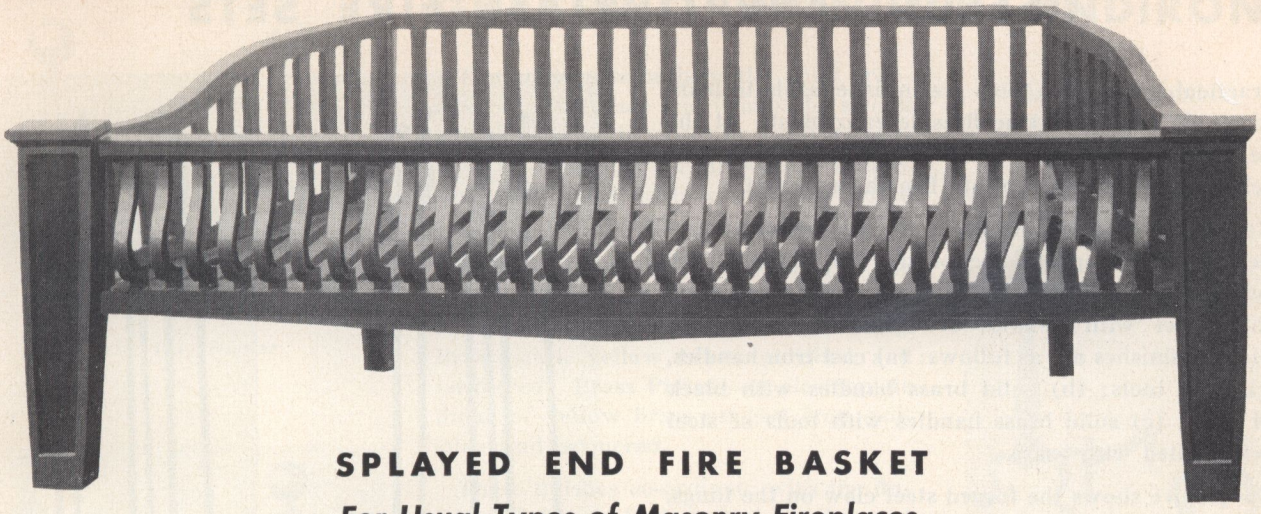
Dr. Furman F. Kepler of Havertown, Pa., likes to exhibit home movies and projected color slides in his home. Instead of cluttering the living room with a temporary screen he has a screen rolled up and concealed above the lighted space at the top of his fireplace. Any time pictures are to be shown the light is switched off, figurines removed and the screen rolled down into place. Dr. Kepler's fireplace is at the upper left.

At the upper right is one of three distinguished fireplaces that ornament the home of Frank Cermak of Parma, Ohio. Mr. and Mrs. Cermak collect pottery and ceramics as a hobby, traveling frequently to Mexico for that purpose. Hence the small shelves that project from the fireplace front, giving support to novel flower containers.

The Wakelee Thompson Fireplace (center, left) is at Timberlake, Ohio, and exhibits a variety of interesting ideas—concealed lighting above to illuminate the long mantel, books conveniently placed near an easy chair, a fuel chamber at the left of the fireplace that can be supplied from an exterior door in the rear.



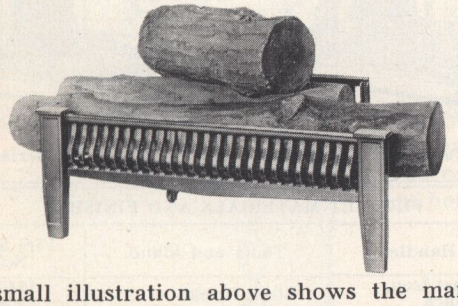
Frank Svec of Brecksville, Ohio, enjoys his hunting excursions to Mexico, where he has an interest in a large tract of land. Nothing heightens his fireside joy so much as the sight of favorite guns. The rug for this gun room is a gigantic bear skin.



SPLAYED END FIRE BASKET

For Usual Types of Masonry Fireplaces

This simple and graceful fire basket is shaped to fit a fireplace with sides properly splayed, as indicated in the Donley construction drawings, shown on Page 11. It is cast from the best quality of stove plate cast iron and has a record for enduring severe service for many years.



The small illustration above shows the manner in which the ends may be removed for burning firewood. They slip out easily when lifted and go back in place securely when coal is the fuel. This is valuable when wood is an occasional fuel. For regular wood burning, the Donley Log Rest or a stout set of andirons is recommended.

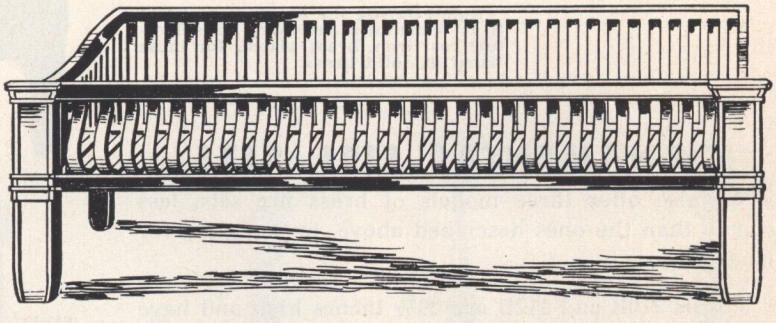
The advantages of a fireplace with splayed sides is explained in the chapter on Fireplace Construction, Page 7. Such a fireplace should by all means have a fire basket that conforms to its hearth plan. Widely used, the Donley Fire Basket has earned the approval of thousands of users.

Front Order by this No.	Back	Depth	Shipping Weight	Suitable for Fireplaces With Opening Widths of
24″	12½″	15″	42 lbs.	26″ to 28″
28″	16½″	15″	46 “	30″ to 34″
30″	18½″	15″	48 “	32″ to 36″
34″	22½″	15″	54 “	36″ to 43″
40″	28½″	15″	70 “	44″ to 60″
57″	45½″	15″	110 “	60″ to 72″

Height at back, 12″. Height at front, 10½″. Clearance for andirons under front, 5″.

SQUARE END FIRE BASKET

For Heatsaver Fireplaces . . . also Unusual Masonry Types



The fire chamber of a Heatsaver Fireplace differs from the usual masonry fireplace interior in having square sides, rather than splayed sides. Hence it calls for a fire basket with squared ends, such as is shown in the illustration at the right. It has the removable ends and its construction is similar to the splayed end basket described above.

It is made in five sizes, lengths over all being 26½ inches, 30½ inches, 34½ inches, 38½ inches and 46½ inches, and 15 inches deep.

The Square End Damper is also the correct damper for Unusual Fireplaces, described in the chapter beginning on Page 22. These are the Projecting Corner Fireplace of several types, the Three-Way Fireplaces, Nos. 1 and 2, also the Double Opening Fireplace.

Heights and andiron clearances are same as in the table above—shipping weights substantially the same as for corresponding sizes shown in table.

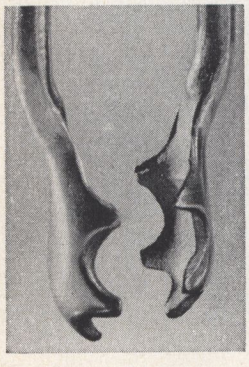
For Two-way double-faced fireplaces we supply the square end fire basket double-faced, giving the same appearance from either side of the fire.

USEFUL, APPROPRIATE FIRE SETS

Practical, sturdy fire tools are indispensable to management of a fire and true fireside enjoyment. At the same time, an attractive set of tools in a stand that matches makes an appropriate hearth ornament.

We especially pride ourselves on the practical usefulness and fine appearance of the No. 240 and 250 series, illustrated at the right. They are forged from $\frac{7}{16}$-inch steel with handles of cast iron and brass. Choices of finishes are as follows: (a) cast iron handles, black steel tools; (b) solid brass handles with black steel tools; (c) solid brass handles with tools of steel heavily plated with brass.

The picture shows the forged steel claw on the tongs, developed after tests to secure the firmest grip on the fuel. The tools are set in a stand, having an attractive base of cast iron. Stands have graceful retaining horns to hold the tools securely upright. The base has a raised rim to prevent the scattering of ashes which may fall from the suspended tools.

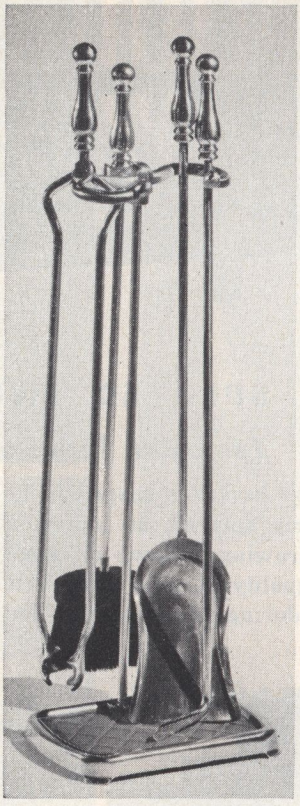


Close-up of forged steel claw on tongs of 240 and 250 series. Grips fuel firmly.

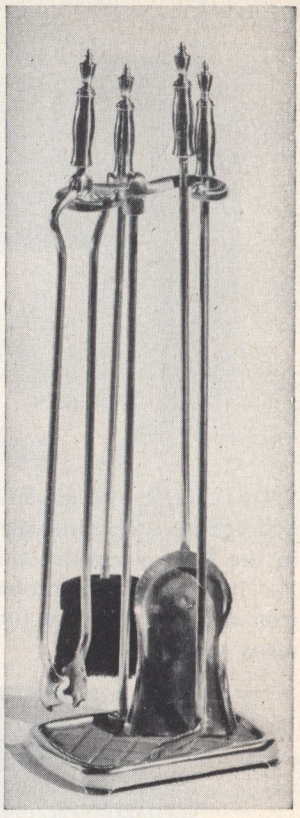
The height of the tools, in the stand, is 30 inches and shipping weight is 18 pounds per set.

These are fire tools that can be counted upon for years of severe service without bending or breaking, tools any owner will enjoy using. The selection of a fire set is sometimes determined by the desirability of matching handles with andirons that have been selected. If andirons have a ball top, select a fire set of similar design. If an urn top, choose urn-shaped handles.

Note—During the shortage of brass it is sometimes necessary to substitute cast iron, brass plated, for those listed as solid brass.



Model 240 Series



Model 250 Series

FIRE SET MATERIALS AND FINISHES

Handles	Tools and Stand	Fire Set No.
Cast Iron, Black	Steel, Black	{240 {250
Solid Brass	Steel, Black	{247 {257
Solid Brass	Steel, Brass Plated	{248 {258

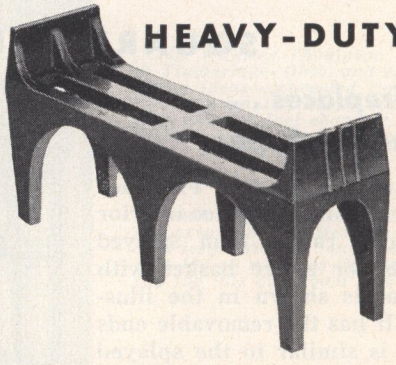
ORNAMENTAL FIRE SETS

We also offer three models of brass fire sets, less sturdy than the ones described above, but adapted for moderate use.

Models 210B and 212B are 29½ inches high and have a flat base to the stand. The handles of the 210B have a ball top and the 212B an urn-shaped top. Shipping weight is 16 pounds.

Model 218B is 27 inches high and has a dome-shaped base to the stand. The handles have a ball-shaped top. Shipping weight is 12 pounds.

HEAVY-DUTY LOG REST



Two heavy, cast iron log rests, such as shown in the illustration, equip a fireplace for heavy wood and high temperatures that andirons are not intended to stand. Two is the usual number, more may be necessary in a wide fireplace if shorter firewood is sometimes burned. If andiron is valued for its ornamental appeal, the shank can be inserted between the legs of the log rest. Will support a grill for cooking. Made in two lengths, 16 and 20 inches, weighing respectively 41 and 48 pounds. Surface is 5½ inches high and 4¾ inches wide.

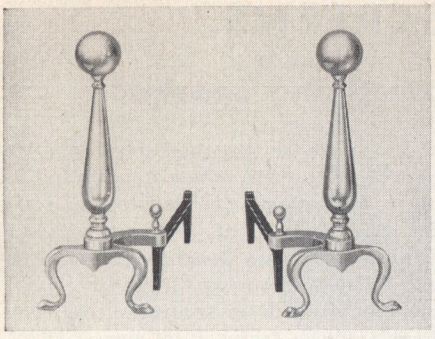
GRACEFUL, DIGNIFIED ANDIRONS

The andiron is perhaps the chief ornament of a fireplace and it must be strong and substantial in order to fulfill its purpose as a support for firewood. Donley Andirons fulfill both conditions, while avoiding eccentricities of design.

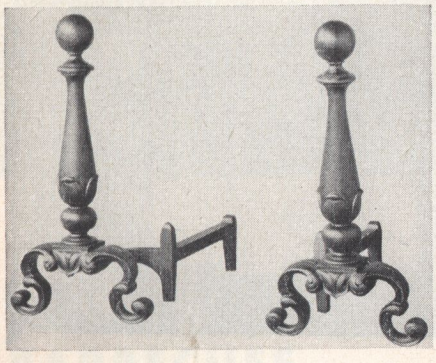
The table should be studied for the various finishes—Art Black, a semi-gloss black that is rust and heat resisting. Brass—cast, yellow brass, polished and lacquered. Brass Plated—an electroplate finish of yellow brass on cast iron, polished and lacquered.

These finishes co-ordinate with the finishes of fire tools described on the next page. Shanks are curved, except as illustrated, and low enough to fit under Donley Fire Basket or Donley Log Rest.

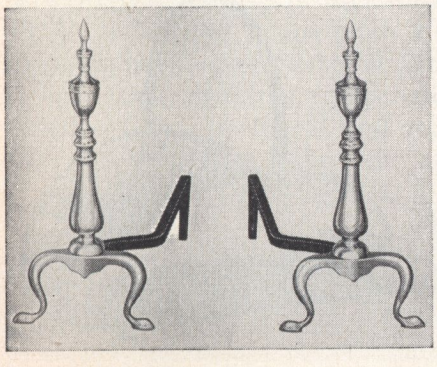
Order by number, consulting table in regard to finishes.



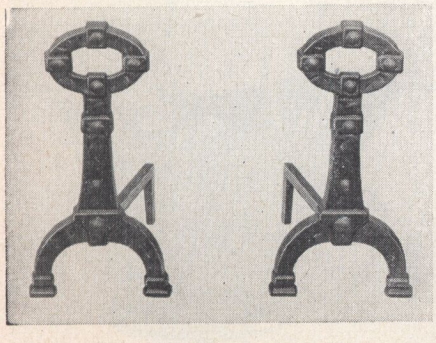
No. 158—The Brewster



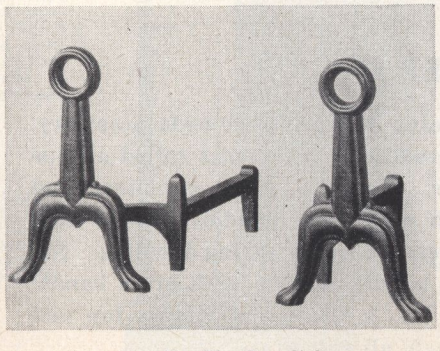
No. 20—The Regal



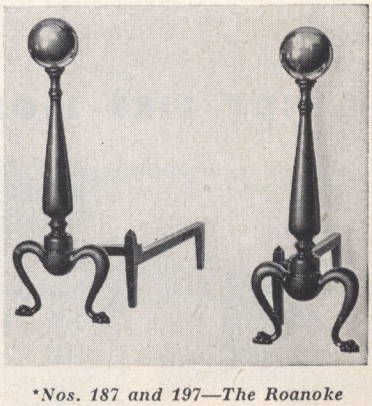
**Nos. 167, 168 and 178—The Rumford*



No. 220—The Craftsman



No. 50—The Standish



**Nos. 187 and 197—The Roanoke*

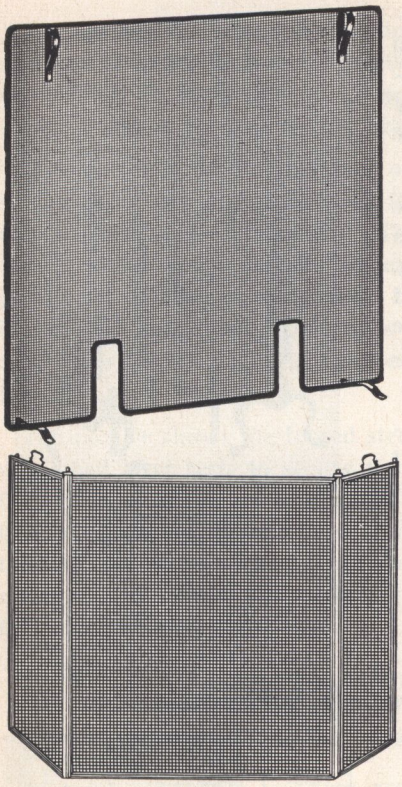
Nos. 207 and 217
The Mt. Vernon

Materials & Finishes

*Different numbers for same style andiron refer to different heights.

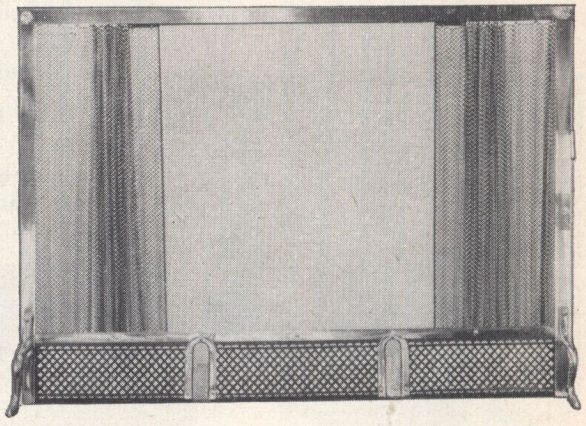
Name	Height, Inches	Cast Iron, Black	Cast Iron, Brass Plated	Cast Iron, Black, Cast Brass Top	Cast Brass
		No.	No.	No.	No.
Regal	22	20	21	..	..
Standish ..	14½	50	51	..	..
Brewster ..	19	..	..	..	158
Rumford ..	16	..	..	..	167
" ..	18	..	..	..	168
" ..	21	..	..	..	178
Roanoke ..	16½	..	..	187	..
" ..	20½	..	..	197	..
Mt. Vernon	20½	..	..	207	..
"	23½	..	..	217	..
Craftsman	17	220	221	..	..

CONVENIENT FIREPLACE SCREENS



Give protection from flying sparks

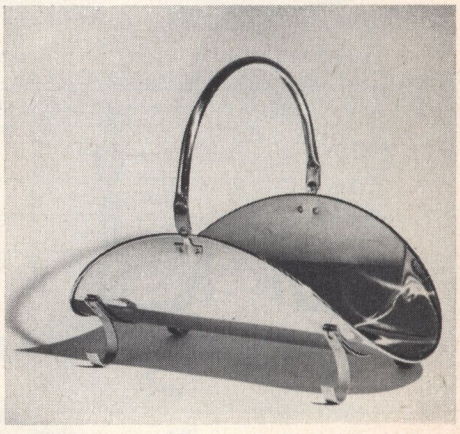
Even though your fireside preference is for an unscreened view of the flame, a fire screen should be at hand to protect the fire when unwatched—protect the rug from spark holes, protect against more destructive conflagrations, protect young children from the danger of clothing aflame. Especially, a home owner should be able to leave his fireside at bedtime with no fear of ensuing trouble . . . Donley Fire Screens are of three types, the newest being the curtain screen shown below. It is free standing, yet fits closely to the fireplace front. The facing of the frame is of brass. The mesh curtain is moved freely. There are notches for the admission of andirons . . . The Donley line also includes close fitting flat screens, in various sizes as shown at the upper left, as well as paneled screens of three, four and five panels. All are made strongly for lasting service. Special sizes are available on order. Write for complete information and quotations.

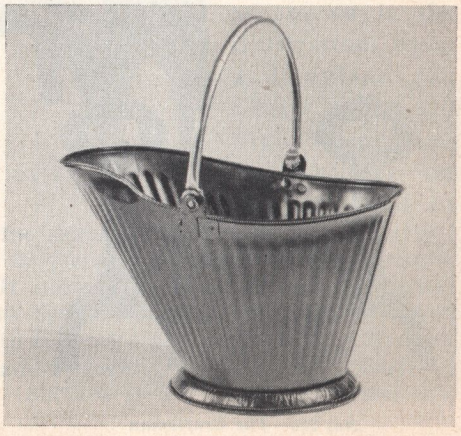


ATTRACTIVE FUEL CONTAINERS

Combine Utility With Fireside Charm

A well-made fuel container of sufficient capacity is a fireside necessity. Attractively shaped, with the lure of gleaming brass, it adds much to the charm of the fireside picture. Shown here is the more popular of the Donley Wood Carriers, obtainable in three finishes, also the practical and popular Donley Coal Hod No. 7. Handles of all these containers are of brass, but the No. 1 Wood Carrier has a black body. No. 4 is Solid Brass. Shipping weight in each case is 7 pounds.





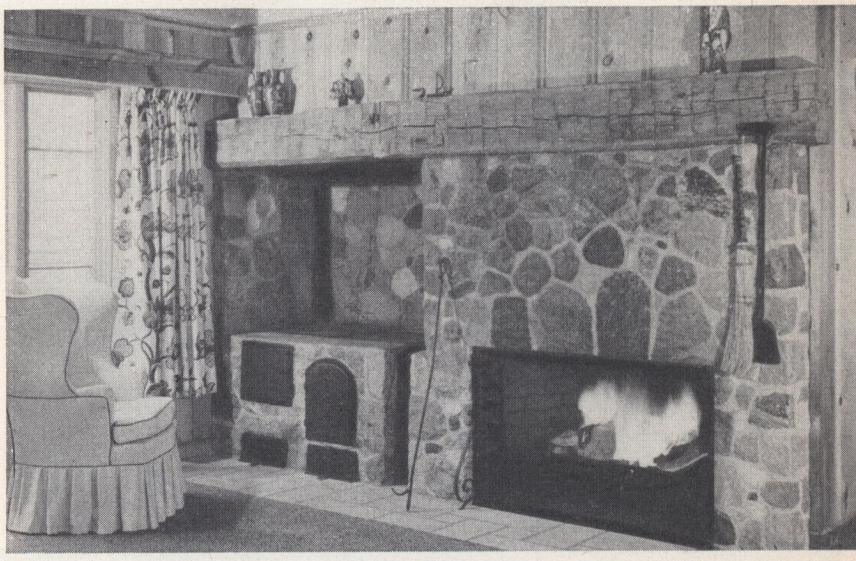
HANDY FIRE LIGHTER

An intriguing and useful fireside accessory, backed by tradition. Sometimes called a Cape Cod Lighter. Consists of oil container and lighter torch with metal handle. Can be kept burning several minutes, saving kindling. No. 2 has black handle and top with brass handle and knob. No. 3, black body, brass top and handle. No. 5, all cast brass.

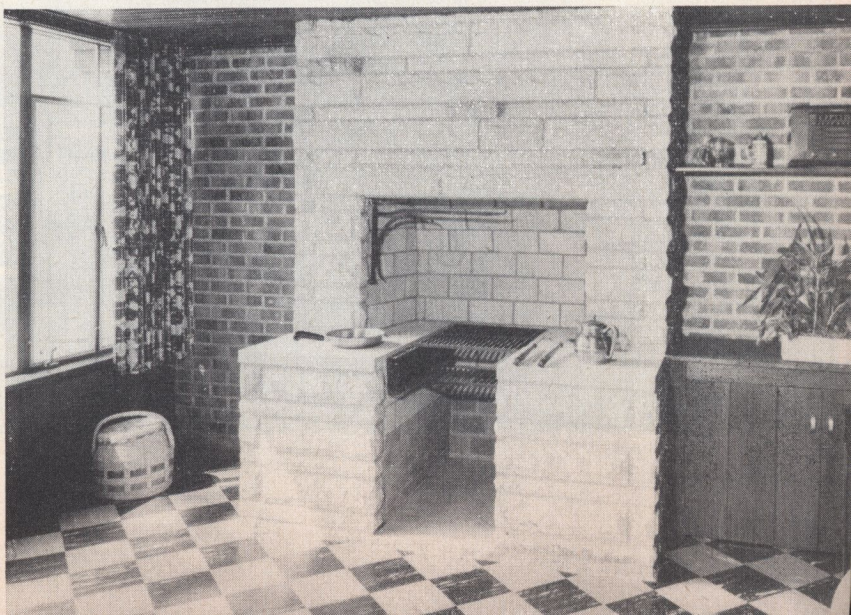
INDOOR BARBECUES

WHILE there is inspiration and zest in dining in the open air, an increasing number of barbecue fans like to install their cooking equipment where weather offers no threat and grilled edibles can be enjoyed the year around.

Above is an all-purpose fireplace in the sun room of Mr. and Mrs. Hugh Selby, Edgewater Drive, Lakewood, Ohio. A Donley No. 23 Range Assembly unit is installed beside the open fire area, with a crane and kettle above it—equally fitted for a cheerful evening blaze or a grilled snack for family or guests.

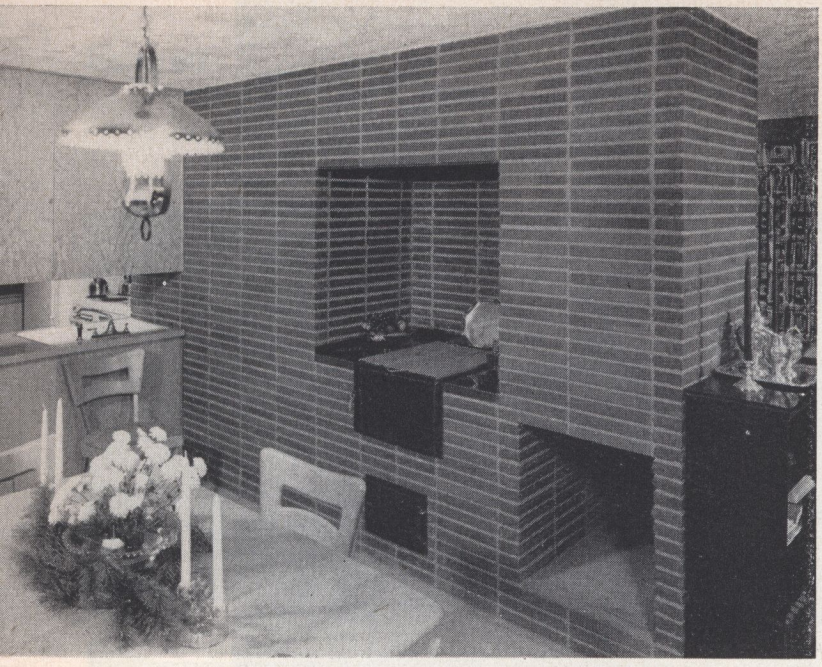


The middle picture shows an indoor combination of heating and cooking fireplace in the sun room of Willard Stanley at Twinsburg, Ohio. At the right is the open fireplace, encased in native field stone. At the left are three Donley cooking units. The No. 23 Range Assembly is at the extreme left and close to it a No. 60 Dutch Oven assembly. The cleft between this and the open fireplace is occupied by a No. 40 built-in Twin-Fire Grill. The Stanley home is a remodeled farmhouse. A picture window, back of the camera position, overlooks a private lake.



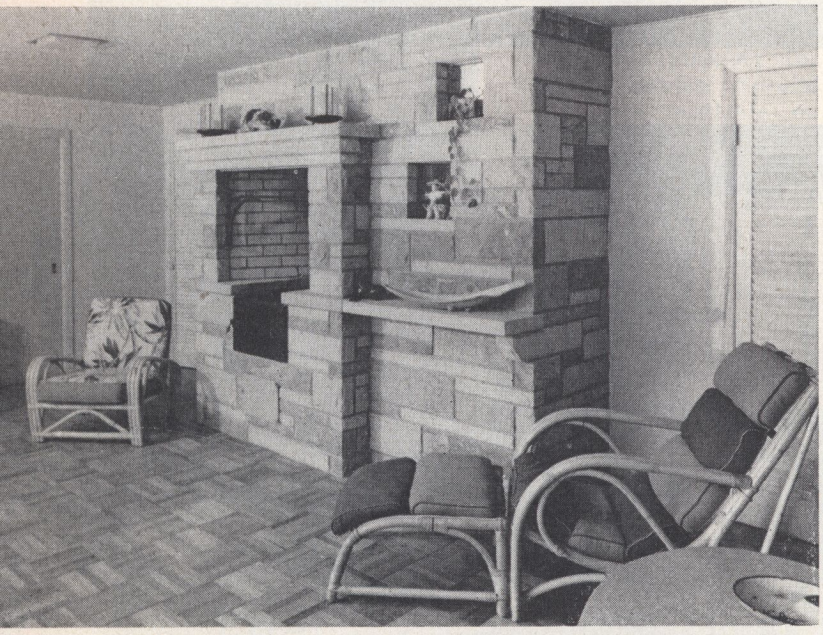
On the enclosed porch of C. F. Geiger, in Brecksville, Ohio, an attractive stone grill has been erected, with provision for grids at two levels and a crane, all under a hood that communicates with a flue. It is especially adapted to charcoal cookery. Use of miscellaneous fuels would probably call for enclosure of the fire chamber.

OUTDOOR FACILITIES FOR INDOOR FEASTS

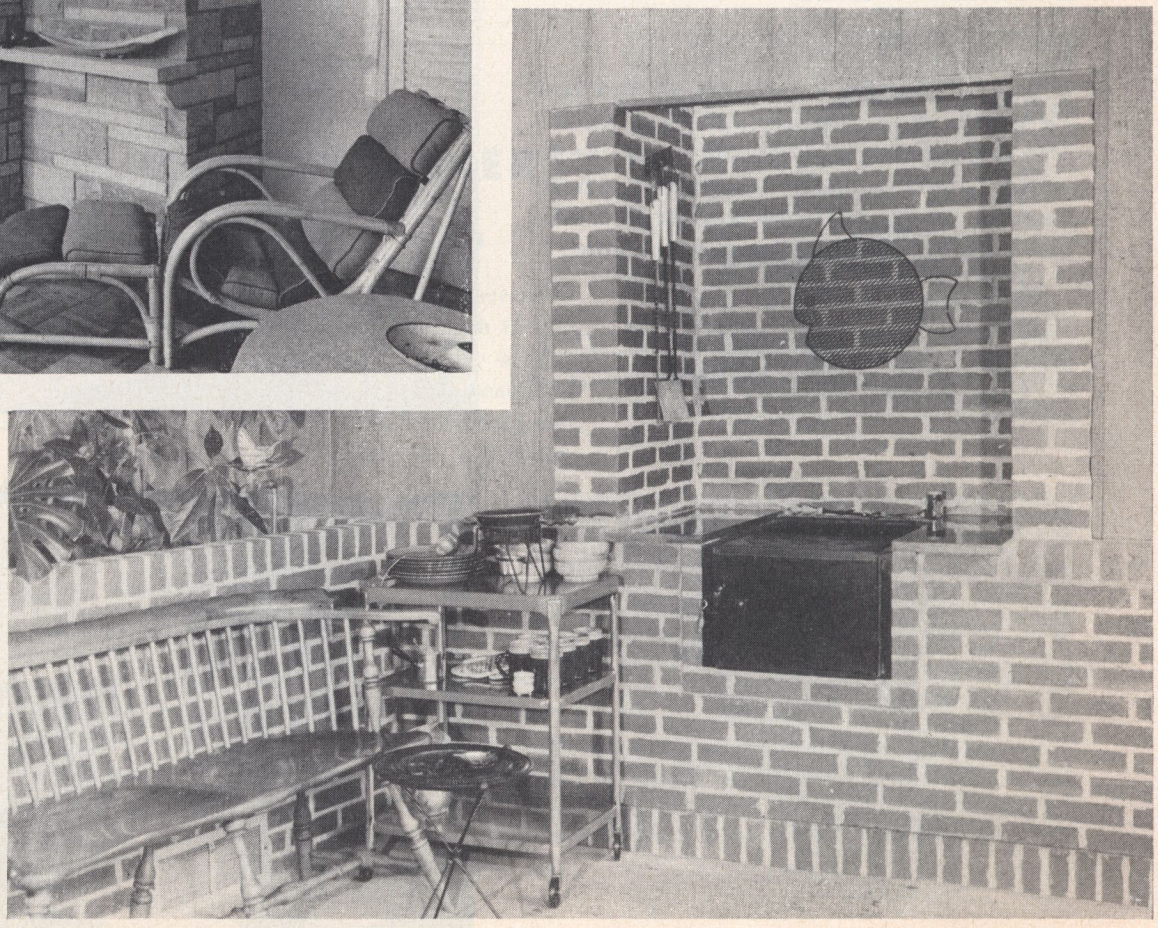


Huntington, Indiana, is the location of the admirable Roman brick treatment that embraces a Donley No. 23 Range Unit. It imparts an outdoor informality to indoor feasting at all seasons, in the home of Mr. and Mrs. Elmer Champlin of 1510 North LaFontaine St. John Lovel of Indianapolis is the architect.

A similar installation in the home of Mr. and Mrs. Joseph E. McSteen, Beechwood, Ohio, is achieved with Northern Ohio sandstone ashlar. Ornament is stressed in recesses that hold figurines and flower pots, also the shelf that holds a quaint, carved miniature boat. Carl T. Apicella Associates are the designers.

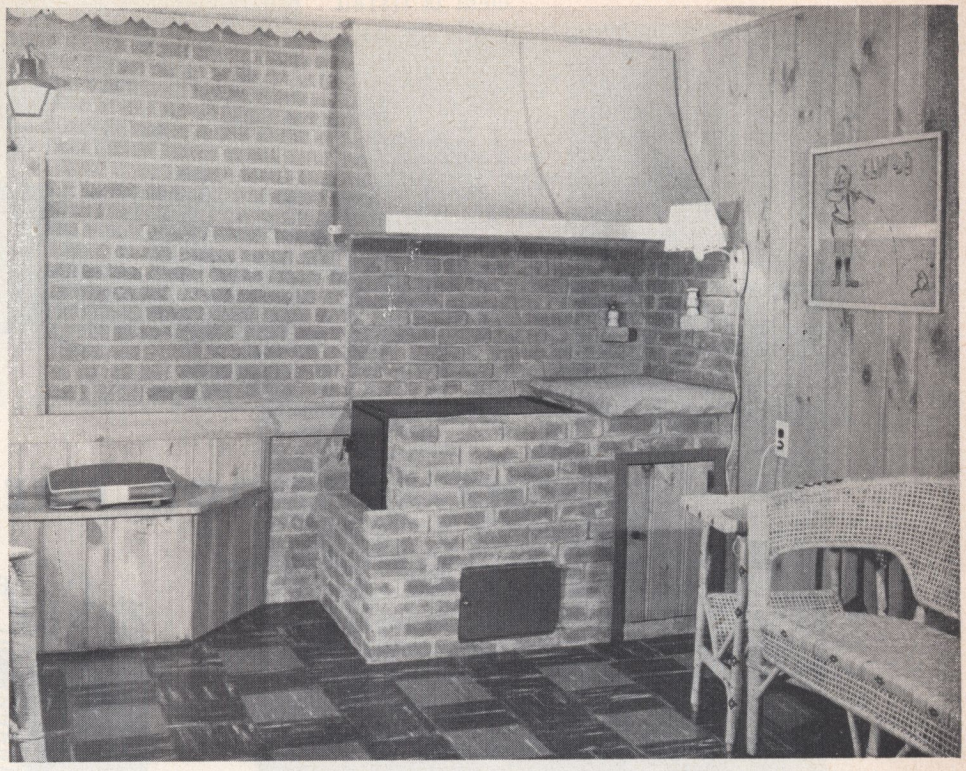


The home of Gordon Hann in Geauga County, Ohio, is likewise equipped with a No. 23 Range Unit for entertaining in a large sunroom that has a picture window at the right. Brickwork is projected at the left to form a low, angled partition that separates the room from an entrance area.



Indoor Barbecues . . .

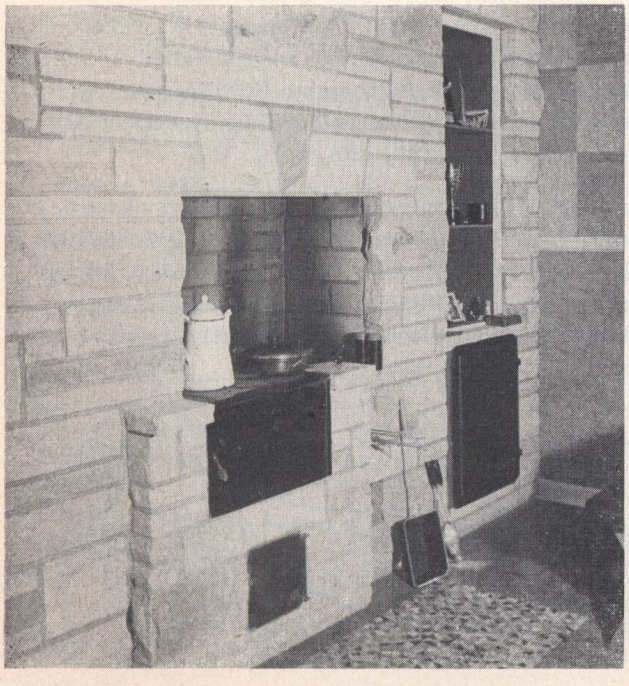
Sometimes as the chief kitchen equipment, but more often as an aid to informal hospitality, home owners are installing barbecue units in their homes. Sometimes the location will be on an enclosed porch, or sunroom, sometimes in the basement recreation room, but nearly always so arranged as to share a chimney stack in a room adjoining or above.

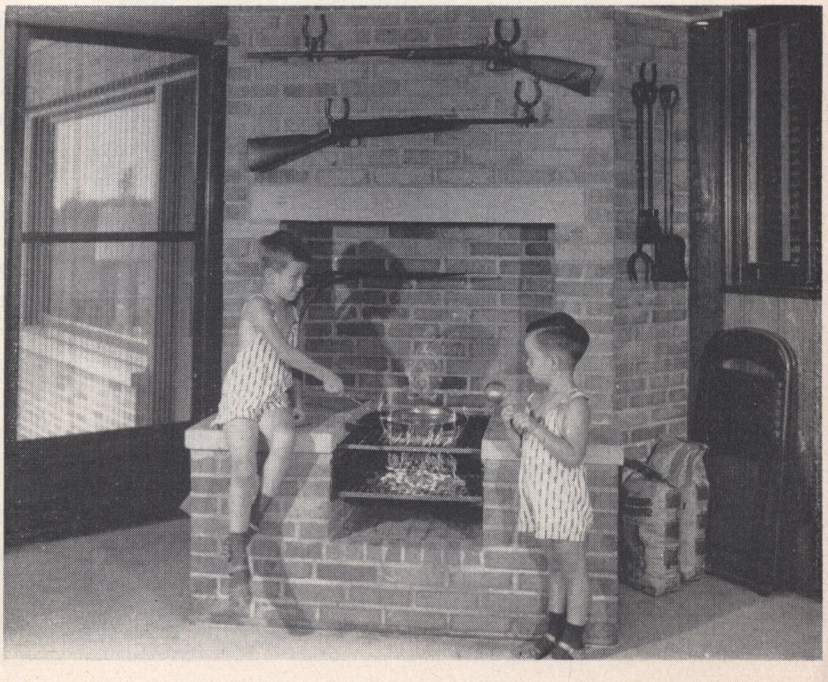


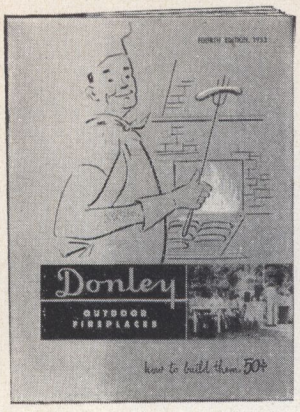
The basement cooking assembly shown at the right in the recreation room of the Elwood West home in Cleveland is the delight of two teen-age daughters, as well as their elders. The barbecue unit has a Donley No. 23 Range Assembly, set transversely with ash door below. Tools and fuel are stored behind the wooden door, there being a stone shelf above. Fumes are carried away by means of a specially fabricated aluminum hood with an electric exhaust fan at the outlet.

When Mr. and Mrs. W. H. Summers built their new home in Brecksville, Ohio, they planned two stone fireplaces, staggered back-to-back. The living room fireplace is a handsome structure and, sharing the same chimney stack, is a No. 23 Grill shown here, recessed under a hood that carries off the fumes. It occupies a cosy dining niche that looks out on a portico. The large cast-iron door encloses storage space that has an arrangement of shelves above.

Carl T. Apicella and Associates of Cleveland designed this cooking fireplace as a part of the new home of Dr. James E. Antozewski, of Independence, Ohio. Fronting on a broad lawn, this spacious residence is provided with four handsome fireplaces. The one shown is in a recreation room, adjoining the garden. The two volunteer chefs are Jimmie and Rickey Antozewski.







A summary of outdoor fireplace equipment is listed inside the back cover.

For more complete guidance in any outdoor fireplace project, send 50 cents for the 32-page booklet, Donley Outdoor Fireplaces, containing drawings, illustrations and directions helpful in obtaining maximum satisfaction from your barbecue.

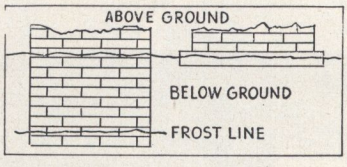
THE OUTDOOR FIREPLACE

DONLEY designs and Donley metal barbecue equipment have helped many people to enjoy the thrill of outdoor cookery and pleasant feasting in the open air. If you are starting a barbecue project, be sure to send for the booklet Donley Outdoor Fireplaces, where the subject is more fully treated, with drawings to guide construction.

Convenience suggests that garden fireplaces be built within easy distance of your kitchen door, as there will be many errands, to and fro. Many splendid barbecues adjoin residences and utilize the house chimney.

Plan in advance by learning the sizes of grills and other standard accessories to be used.

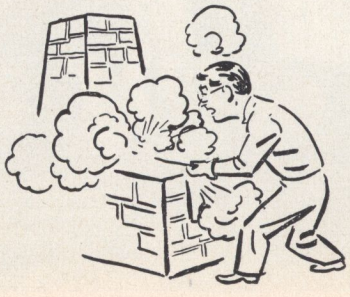
Proper support may mean digging below the frost line for your foundation, or building on a "matte" which is a slab of reinforced concrete, at least four inches thick and extending four inches or more outside the masonry.

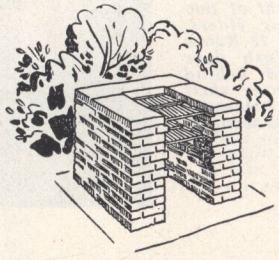


Avoid makeshifts, such as improvising grills of separate rods, bedded in the masonry. When they warp, it means tearing out the masonry to replace them.

A chimney is an advantage when you have a top and doors to control and direct the smoke, as in the Donley No. 23 Range. When top and front are open, a chimney does not help.

Locate with regard to a plan that includes barbecue, tables, benches and such shrubbery and trellises as may contribute to privacy, shade and charm of the location.



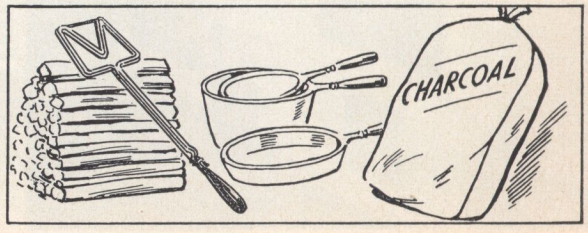


This simple barbecue can be built by almost anyone. See table at end of chapter for grates fitting four different sizes.

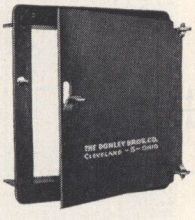
An **inexpensive fireplace** like the one shown at the left can afford much pleasure. It consists of a concrete matte supporting masonry walls on three sides of a fire chamber, the front being open. Ledges in the brickwork support grids at two levels. This is known as the Donley No. 10 Assembly, as shown in the summary inside the back cover. Grates and masonry materials can be bought in most localities for $5 to $15. The two smaller sizes are based on the use of two grates, one above another. The larger sizes employ two grates on each level, four in all.

Storage is important in the enjoyment of an outdoor fireplace. One or more storage spaces should be part of any but the simplest structure. Kindling, fuel, pots, pans, broiling forks, coffee pots will be used more conveniently if stored on the site of use.

Fuels to Use—Some rural premises afford quantities of solid fuel in the form of dried tree branches or cordwood sawed and split. Use of such points toward the advantage of a chimney. But most tasks of cookery are best performed with the even and relatively smokeless fire of charcoal.



NO. 23 COOKING RANGE ASSEMBLY



Includes four grates, as shown above, also ash door and strong steel lintel.

THE Donley Range assembly No. 23 is the latest development of this popular unit for outdoor cooking with unit built into the masonry.

Installed singly, the Donley Range has brought delight to many a home garden environment, but it is—

Used in combination, very often, with other units, such as the No. 41 Twin-Fire Steak Grill or the No. 60 Dutch Oven.

Not anchored, the Range Unit is slipped into a prepared recess in the masonry. It can be removed for winter storage or re-conditioning.

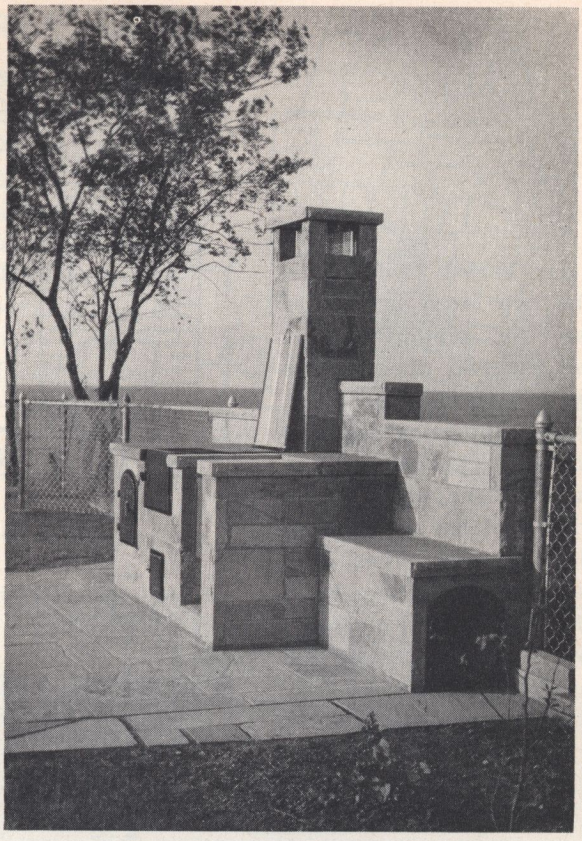
Strong, welded construction makes the No. 23 Range a lasting investment in enjoyable cookery and happy feasting. Its welded steel frame is 16 by 24 inches, horizontally, and 14 inches high.

Heavy steel sides are surmounted by a hinged aluminum top, with fire door of aluminum at the front.

Aluminum top is important in directing flame and smoke to the chimney. When swung upright, as in the use of charcoal fuel, it protects the masonry from smoke and stain. When the No. 23 unit is installed indoors, the top may be omitted.

Bottom is open to allow ashes to fall into ash chamber below. Rear is open so that smoke enters the flue freely.

Ash Door is provided for the removal of ashes, also angle lintel for support of front of chimney.

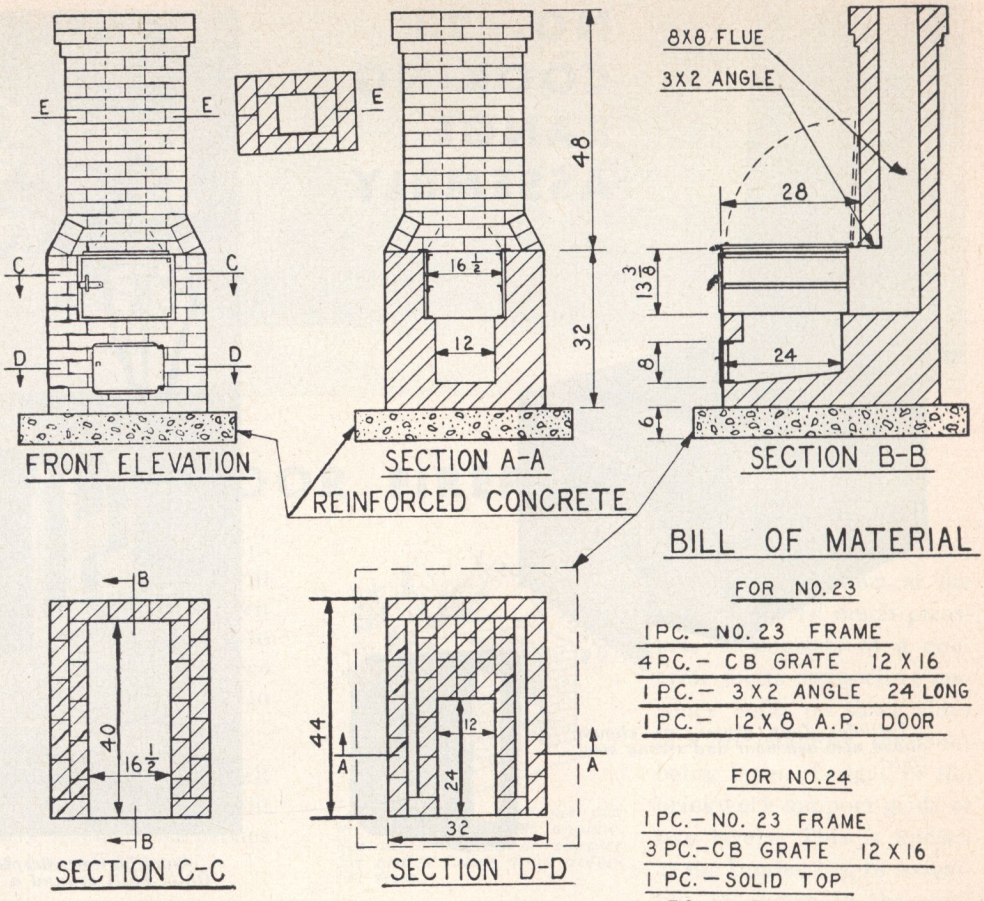


Combination fireplace of H. H. Boerstler, Bay, Ohio, built around a Range Assembly.

This fireplace of B. Lenken, Silver Spring, Md., has a Range Assembly with unusual location of ash door at side of structure.

Four grills are included, two for the upper and two for the lower level, each grill being 12 by 16 inches in size.

Solid top sections with removable lids, like those of an old-fashioned coal range, are available in the place of grids. When one such section is substituted, the Range is designated as No. 24. With two solid top sections, it is a No. 25.



Has Varied Usefulness—The two lower grates are used for supporting fuel and the two upper grates for grilling meat, fish, etc., or for supporting pots and skillets. When charcoal is the fuel, the lower grates will be placed on the middle supports; when solid fuel — at the bottom level. The No. 23 Range gives you everything but baking and roasting, which can be added by a combination with a No. 60 Dutch Oven. For more rapid grilling, a No. 41 Twin-Fire Steak Grill may be included in your fireplace structure.

Modular Dimensions—This means that your No. 23 Range is easy to install in masonry of standard size units. The modular movement for simplifying construction has the backing of architectural and building organizations.

BILL OF MATERIAL

FOR NO. 23

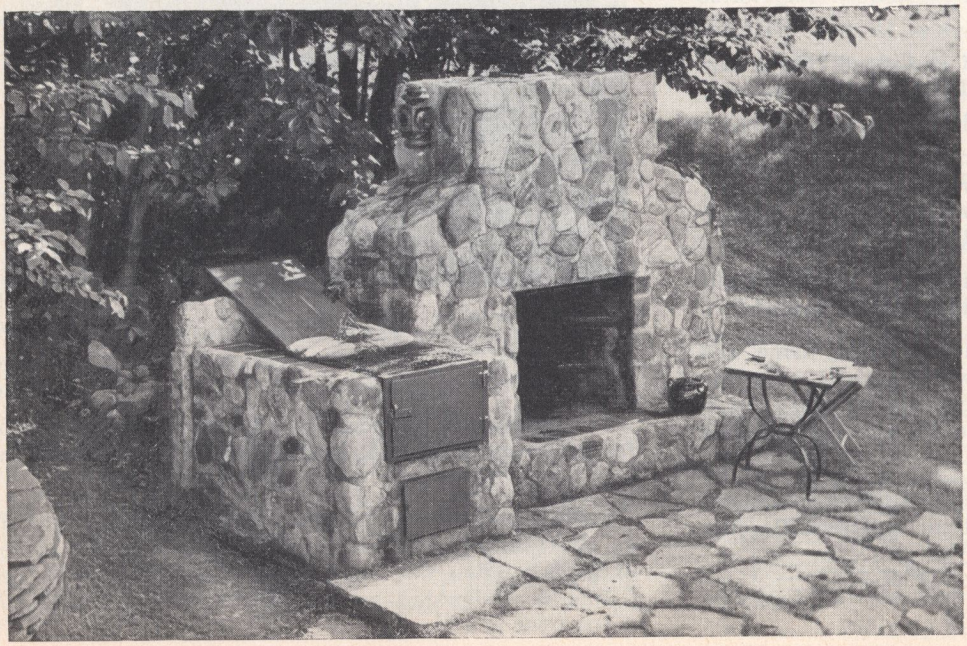
1 PC. – NO. 23 FRAME
4 PC. – CB GRATE 12 X 16
1 PC. – 3 X 2 ANGLE 24 LONG
1 PC. – 12 X 8 A.P. DOOR

FOR NO. 24

1 PC. – NO. 23 FRAME
3 PC. – CB GRATE 12 X 16
1 PC. – SOLID TOP
1 PC. – LID
1 PC. – 3 X 2 ANGLE 24 LONG
1 PC. – 12 X 8 A.P. DOOR

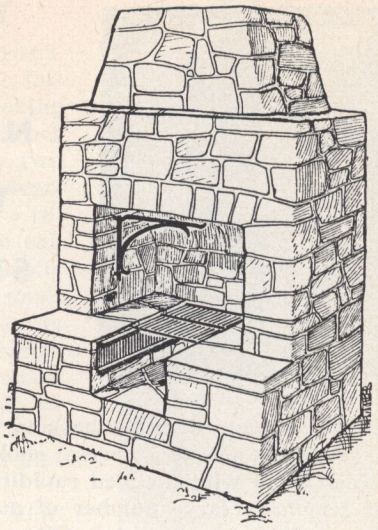
FOR NO. 25

1 PC. – NO. 23 FRAME
2 PC. – CB GRATE 12 X 16
2 PC. – SOLID TOP
2 PC. – LID
1 PC. – 3 X 2 ANGLE 24 LONG
1 PC. – 12 X 8 A.P. DOOR

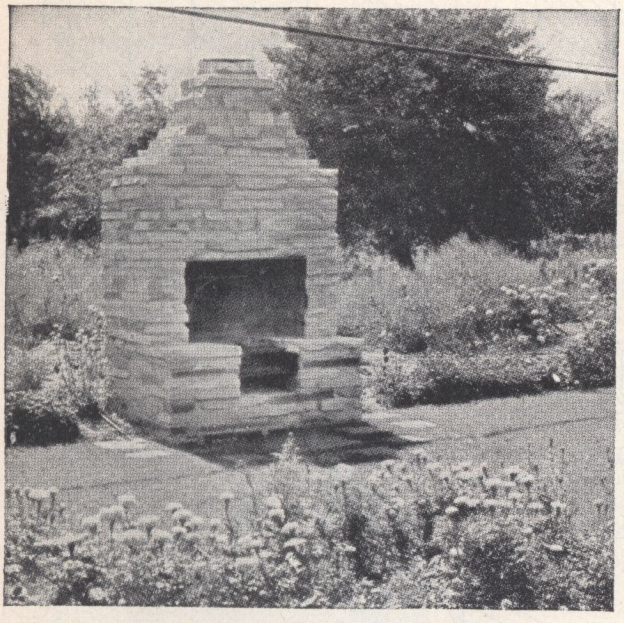


This installation of a Donley Range Unit in a wing of an open fireplace is located at the M. H. Hansman residence in University Heights, Ohio.

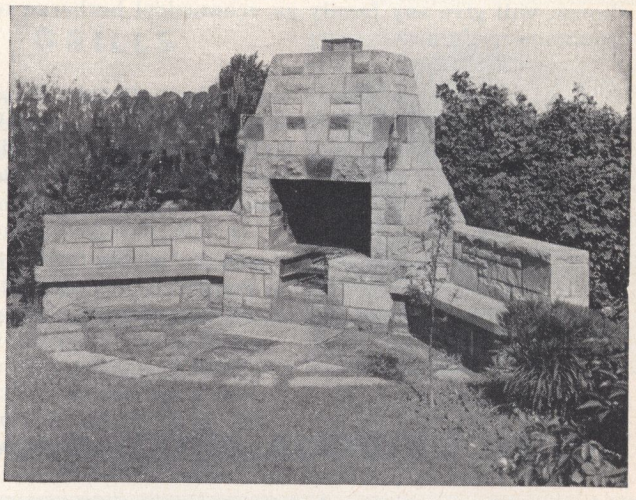
NO. 70 UNIVERSAL OUTDOOR FIREPLACE



For many outdoor fireplace fans, the joys of informal cooking have not obscured the charm of an open fire in the evening, when family and guests assemble on the lawn or garden. . . . The Donley No. 70 Universal Outdoor Fireplace is designed to meet the needs both of cookery and charm. . . . For the latter it offers a typical open fireplace in an outdoor setting—typical except for one thing, a depressed central area bridged over by grates. . . . When grilling is in order, this central area holds a charcoal fire built on grates of the lower level. Forward projection of the hearth permits both lower and upper grates to be drawn forward if desired. . . . There is a Donley Crane to hold or support a pot or kettle. Any type of cooking utensil may be supported on the upper grates while charcoal or solid fuel is burned below. . . .



No. 70 Cooking Fireplace on premises of Clarence H. Shafer, University Heights, Ohio.



No. 70 Cooking Fireplace at home of A. R. Green, Shaker Heights, Ohio. Mr. Green is vice-president of the Cleveland Quarries Co., which furnished the very effective stone.

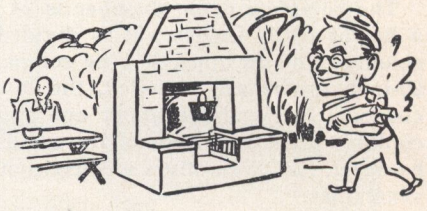
In praise of fuel that is lugged . . by the Donley Observer

I admire the fire that comes on a wire
Which causes my coffee to bubble.
And fuel of the type that flows through a pipe
Will often save labor and trouble.

But I claim all the same that I'm partial to flame
And to fuel that has to be lugged.
I never feel odd when I'm toting a hod
Or an armful of hickory, hugged.

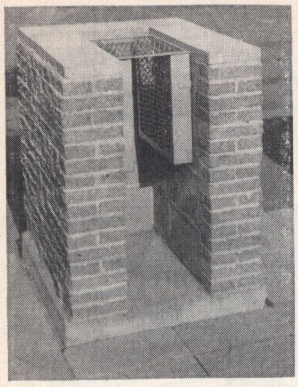
Yes, heating by steam is a very fine scheme,
Its comfort pervading each pore.
When run through a grid in the flooring well hid,
I wonder can science do more.

Technique has advanced and I'm duly entranced.
At each boon, I'm in tune to receive it.
But I don't place reliance quite wholly on science.
I'm able to take it or leave it.



I am warmly devoted to fuel that is toted,
With beds of coals glowing and bright.
And I modestly boast of my toast or my roast
Turned out as my ancestors might.

The diners who gather all say they would rather
Eat this way than any they know.
And I cook and I feed 'em with feeling of freedom
From tantrums that science can throw.

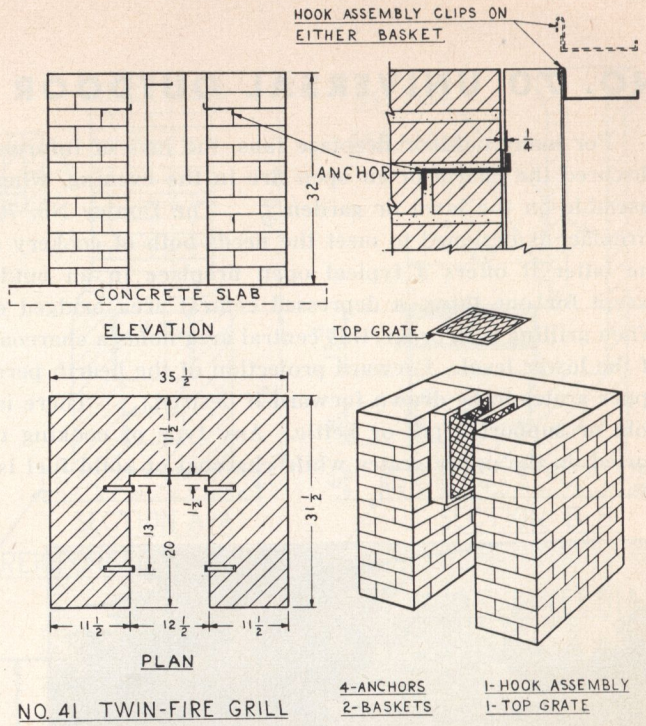


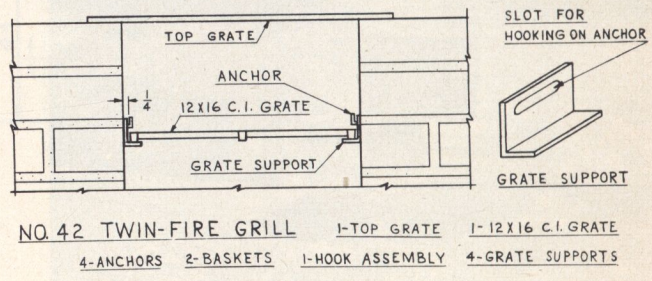
NOS. 41 & 42 TWIN-FIRE STEAK GRILL

Demountable steel fire baskets, hung on both sides of a prepared masonry recess, cook food suspended between them with doubled rapidity and afford a means of serving a large number of guests with hot steaks, chops, fish, wieners, etc. Often combined with other units in a multiple structure, installation by itself, as shown, will give any family an economical barbecue of maximum usefulness.

No. 41 Assembly is a twin-fire cooker. It consists of 2 removable charcoal fire baskets, to be hung on 4 galvanized hanger-anchor bars built into masonry, a pair of hooks for supporting the meat holder and a top grid for coffee or other stove-top cooking.

No. 42 Assembly includes the items of No. 41, plus a 12 x 16 cast iron grate which rests on 4 demountable supports hooked on the galvanized hanger-anchor bars.





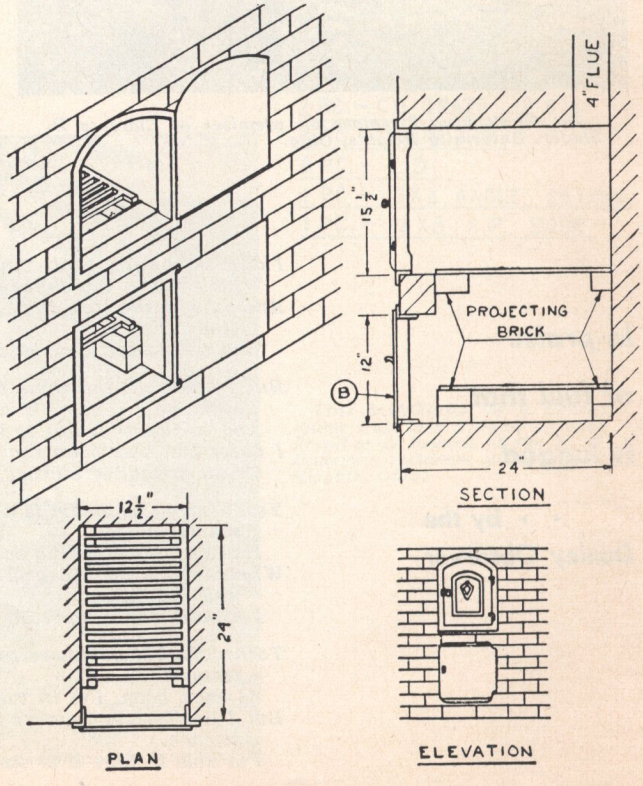
NO. 60 OUTDOOR DUTCH OVEN

At the right are design sketches for the installation of an oven in your outdoor fireplace structure. It can be a separate unit, but more frequently is combined with No. 23, No. 41 or No. 70 units, as shown in the photographs at the end of this chapter.

The complete oven chamber is 24 by 12 inches, with a height of 30 inches. It is divided into a lower fire chamber and an upper baking compartment. Two 12 by 20-inch grates are installed, the lower one to support charcoal fuel and the upper one to hold the baking or cooking utensils. Besides its usefulness in baking or roasting, this oven offers a convenient means for boiling vegetables.

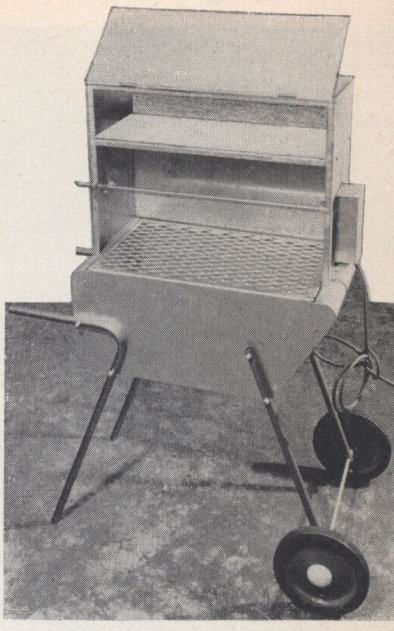
Two doors are provided, an upper, cast-iron door of early American design that serves the cooking chamber, and a lower steel door for fire tending.

Other Types of Oven—Builders have shown ingenuity in locating ovens where heat from a No. 23 unit will serve a baking or warming purpose. Sometimes ovens have been constructed above and behind a range unit, or at one side with only the metal wall of the range to separate it from the oven.



PORTABLE COOKING DEVICES

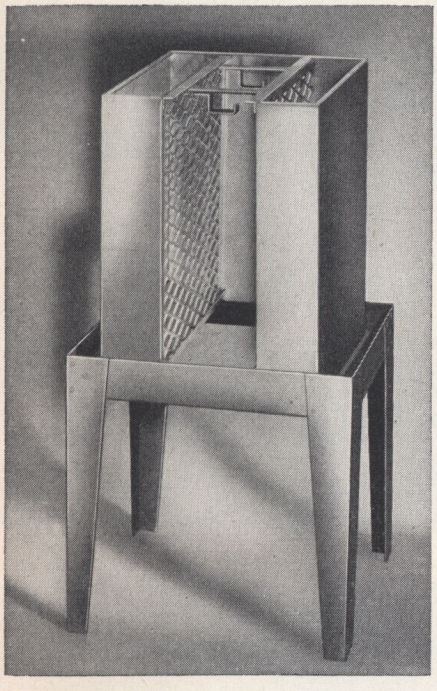
THE NO. 36 BARBECART



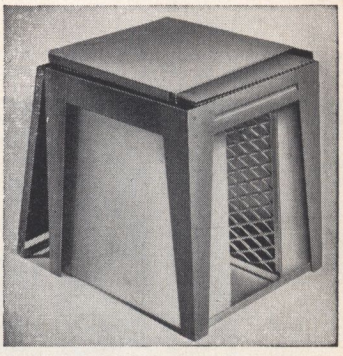
Experience gained in the previous model of Barbecart, plus desire for a neater and even more mobile unit, has resulted in this new No. 36 Barbecart. . . . Its cooking level is 28 inches high, with movable grid 12 by 20 inches in area. . . . Cooking convenience is increased by two 8 by 20-inch side shelves, which are removable for clearance or storage. . . . The fire pan is in the form of a removable drawer, intended for charcoal fuel which can be placed at either of two levels. A new feature permits the combustion area to be reduced when only a small fire is desired. . . . The new Barbecart is lighter than its predecessor and rubber-tired wheels promote easier transit. . . . It is popular with families in rented homes, since it can be taken to a new location. Also, it can be moved from place to place for desired shade or to a porch in case of rain. In winter it can be stored and thus protected from weather.

A removable aluminum hood, open on one side, is an extra for use with this unit. Supports for Donley Electric Spit are integral with the hood, which is especially desirable with spit operation. This Assembly is designated as No. 36.

PORTABLE TWIN-FIRE STEAK GRILLS



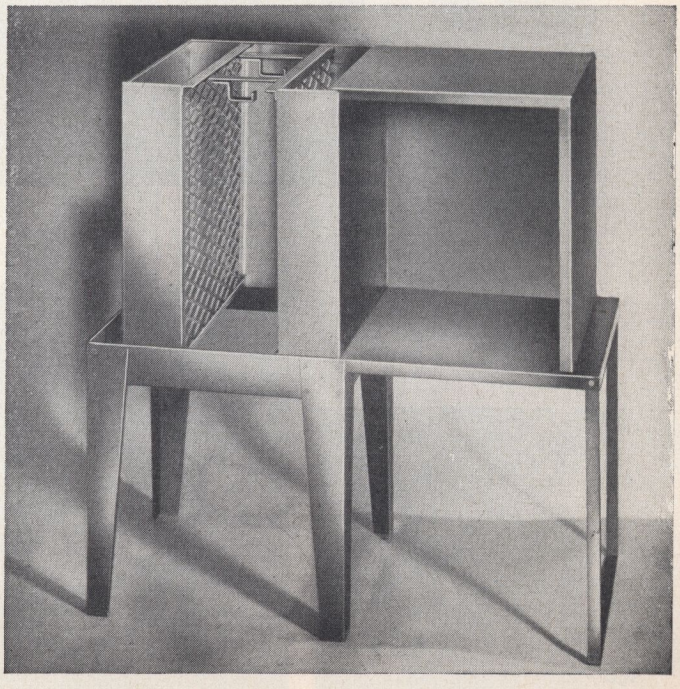
The quickest way to grill steak, chops or fish is to place them in a broiling frame hung between two charcoal fires. The compact No. 50 and No. 55 Portable Twin-Fire Grills embody the same principle as the masonry installed No. 41, but can be compactly stowed in your car for travel to beach or mountains for outings or longer vacations. Hooks welded to the steel frame support the grilling utensil. Frame members are close enough to support pan or kettle on top, for cooking or making coffee. Folds to 14 by 14 by 14 inches. Shipping weight 18 pounds.



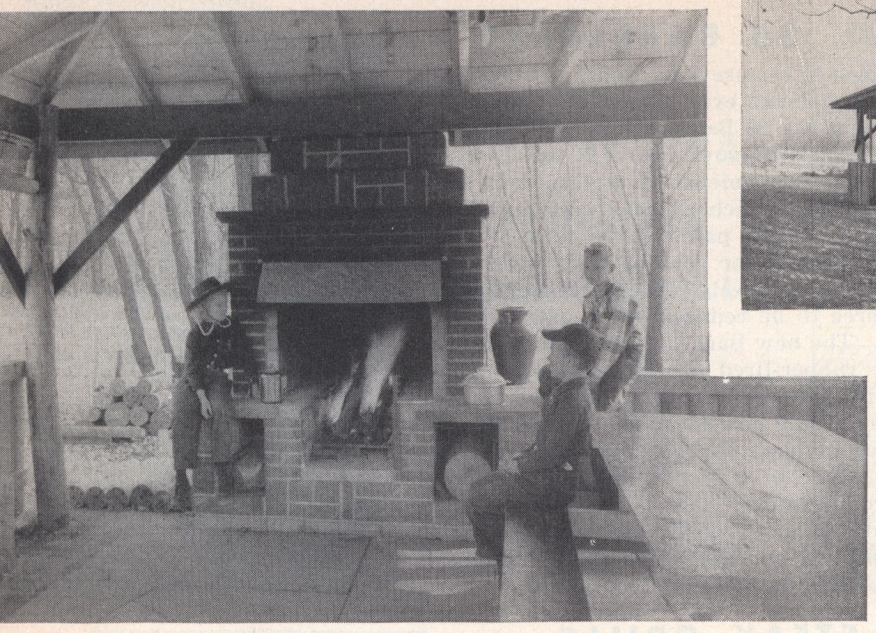
The No. 55 Steak Grill stowed for travel or storage. The No. 50 is similarly stowed in even smaller space.

At Left
No. 50

At Right
No. 55

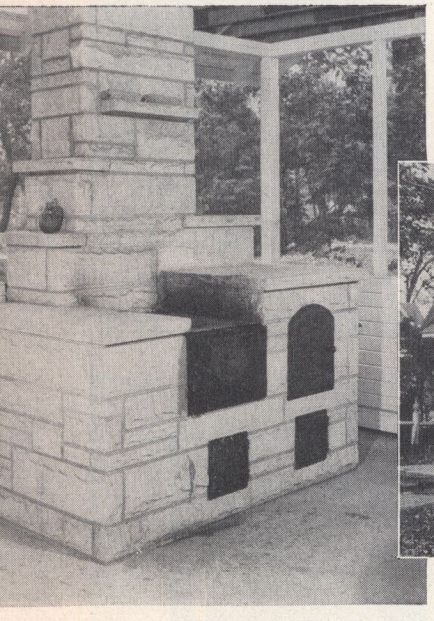


In the No. 55 you have the same broiling and cooking facility, with the added advantage of a warming oven at the side to retain dishes until served. The top also makes a convenient shelf for utensils. When demounted for travel or storage, as shown above, it takes no more room than the No. 50, each being packed in same carton. At the same time, these units are made of substantial steel members, strongly welded, and must not be confused with the many flimsy devices meant for brief use. Warming section comes in two parts. Base and outer support is one. Three hinged sheets forming the top and two sides are the other. Total length assembled, 28 inches, height 27 inches, width 14 inches. Shipping weight 30 pounds.

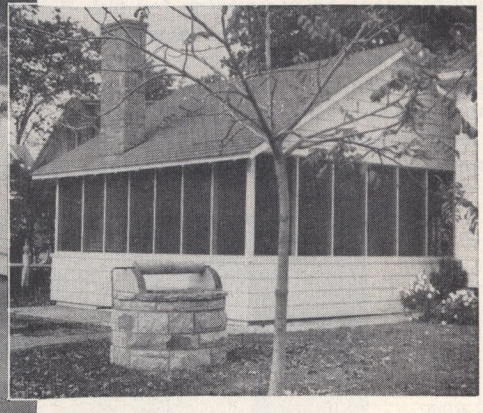


SHELTERS · · · · EXTEND THE BARBECUE DAYS

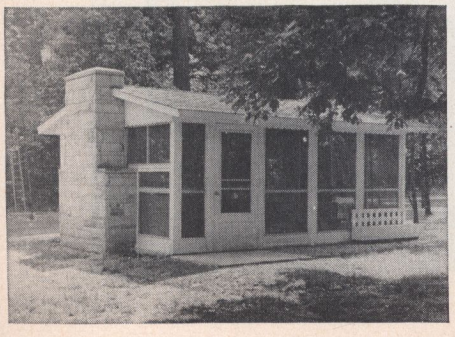
On a broad, picturesque lawn adjoining his home in Parma, Ohio, Edward Salzer has constructed this fine fireplace in keeping with the Donley No. 70 design, good for cooking or for banishing evening chill. To guard against weather disappointments, he erected the rustic shelter, with low parapet of split logs.

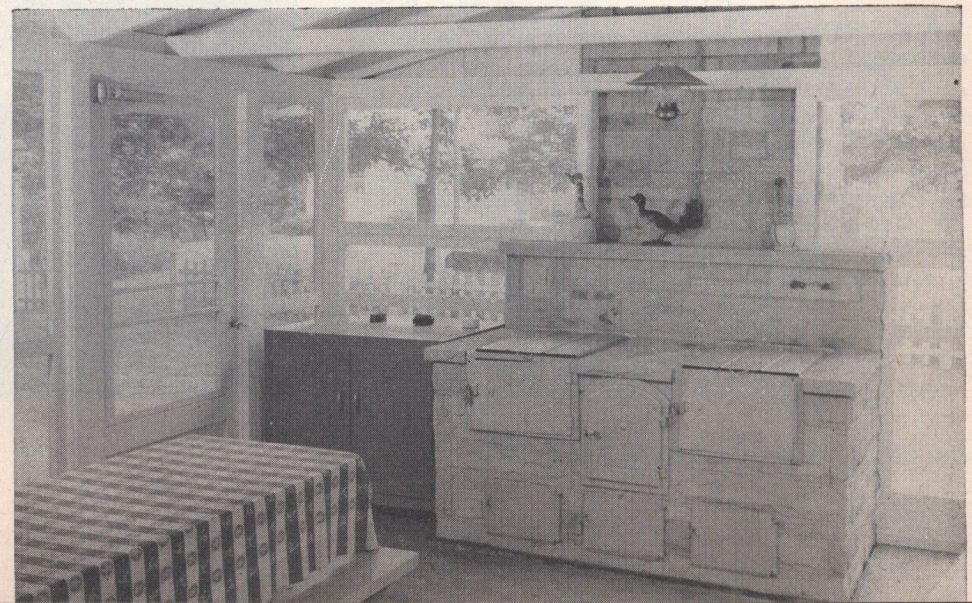


M. B. Lane of Avon, Ohio, is the owner of this stone structure with No. 20 Range and No. 60 Dutch Oven, all enclosed by a screened shelter. It adjoins his home on the shore of Lake Erie in Avon Township, Ohio.

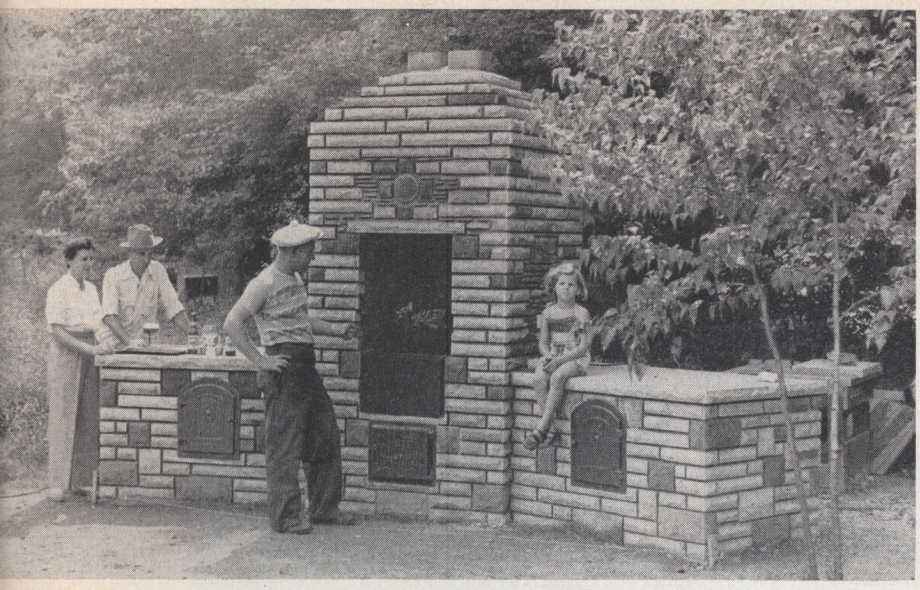


Similar to the Lane sheltered fireplace, but quite distinctive, is the barbecue structure with enclosure at the home of John J. Bohning of Brecksville, Ohio, shown below. It has two Donley No. 20 Range units with a No. 60 Oven between. Despite its immaculate appearance, it had been in daily use through a long summer when the picture was taken.





OUTDOOR FIREPLACES

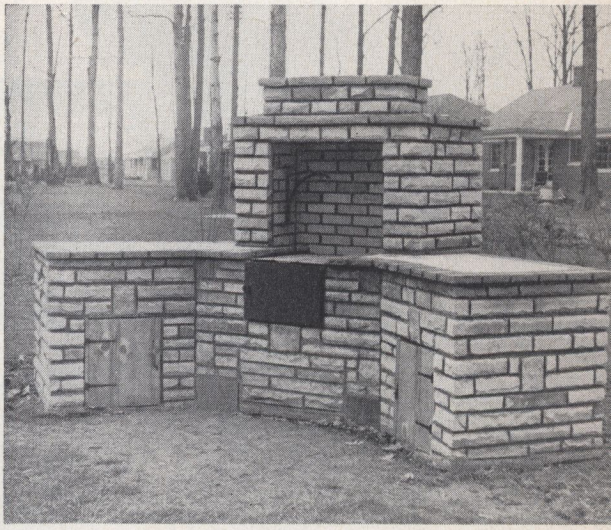


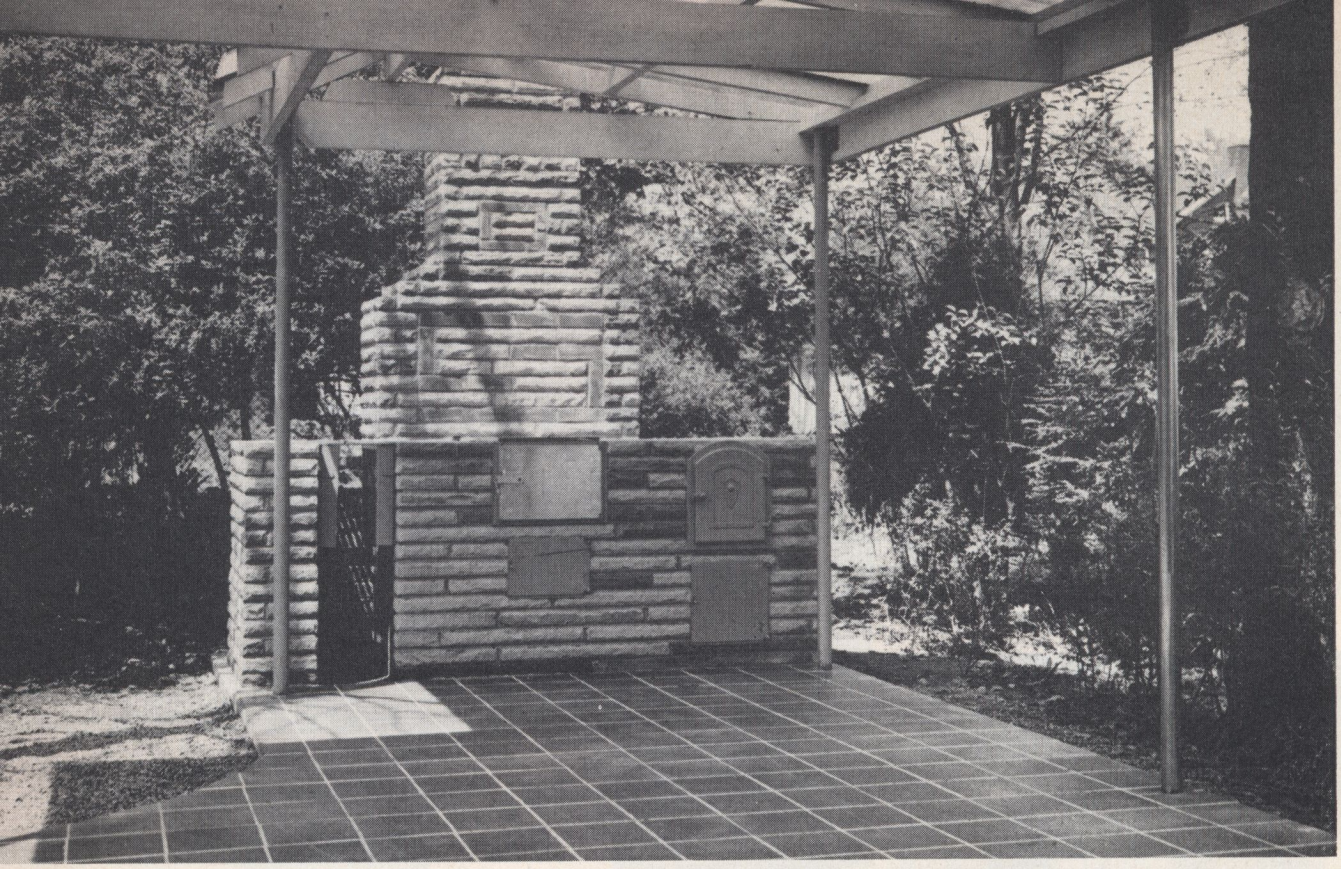
The Zeleniakas family of Euclid, Ohio, with relatives and friends, greatly enjoy this outdoor fireplace with its wing walls angled inward. One of the relatives, Louis Rubertino (left), who formerly practiced the mason trade, is the creator of the structure. It has a spit, with power unit on the outside of the stack, also two storage spaces enclosed with Dutch Oven doors. The owner is seen roasting a 20-pound pig. There is an incinerator in the rear.

Mr. and Mrs. John J. Angelone, of Lyndhurst, Ohio, have the fireplace shown in the middle as a feature of a spacious backyard playground for their youngsters, John, Jr., and Patricia. Angelo Amato is the builder.

The lower fireplace is on the park-side estate of George Ostendorf, of Brecksville, Ohio. Following the general lines of a No. 60 Universal Fireplace, it also has a Dutch Oven and open fuel storage chamber.

The fine stone fireplace at the lower right was built by its owner, Arthur Ziek, of Fairview Park, Ohio. While regularly employed in the industrial chemical field, Mr. Ziek cut and set all the stone for this structure, which includes a No. 23 Range and a cooking crane.



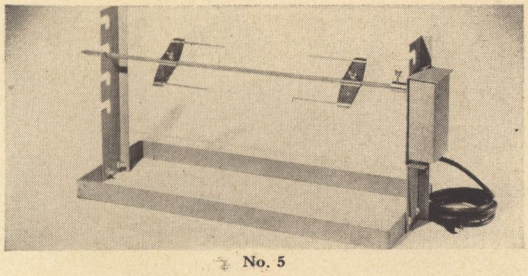


The handsome outdoor fireplace at top is on the premises of Lloyd Cleveland, of Warren, Pa., who is president of the Oneida Lumber & Supply Co. It has a No. 23 Range Unit and No. 41 Twin-Fire Steak Grill, also at the right a No. 60 Dutch Oven with extra wide ash door. Built of rock-faced red brick, the patio is paved with 9" by 9" red hearth tile. A shelter of green Resolite completes a striking color effect.

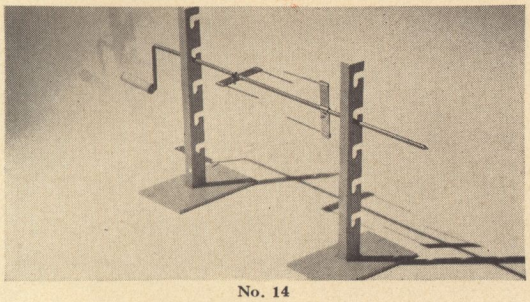
The strikingly complete assembly of cooking units shown in the lower picture belongs to G. E. Brookins and overlooks Hinckley Lake, Medina County, Ohio. Its two Twin-Fire units at the left assure rapid grilling for large numbers of guests. In the center an open fire chamber assures warmth and cheer when needed. A No. 23 Range Unit and storage space complete the array, with a wide patio for tables and benches.

SUMMARY OF OUTDOOR FIREPLACE EQUIPMENT

Unit Number	*Description*		*Shipping Weight Lbs.*
No. 10B	Grate area 12 x 16	2 C. I. grates 12 x 16	22
No. 10E	Grate area 12 x 24	2 C. I. grates 12 x 24	32
No. 10F	Grate area 16 x 24	4 C. I. grates 12 x 16	44
No. 10G	Grate area 20 x 24	4 C. I. grates 12 x 20	47
No. 23	Range assembly for masonry recess 16½ x 28 x 13⅜	Body, including hinged top & front door, 4—12 x 16 grates, ash door & lintel	89
No. 24	Same as No. 23 except replacing 1 grate with a cast iron plate		91
No. 25	Same as No. 23 except replacing 2 grates with 2 cast iron plates		93
No. 36	Charcoal Barbecart 13 x 30 x 27" high	8" Rubber tires; Removable shelves	43
No. 4	Barbecart Hood-oven	Electric Spit, removable Rod & 2 forks	16
No. 41	Twin-Fire Grill Removable from masonry	2 vertical fire baskets; 4 galvanized hanger-anchors; 1 top grid; Hook assembly	34
No. 42	Same as No. 41, plus	1—12 x 16 grate & 4 grate supports	42
No. 50	Portable Twin-Fire Grill	1 grill unit & stand in 14 x 14 carton	22
No. 55	Same as No. 50 plus	Oven attachment; all collapsible to enclose in 14 x 14 carton	30
No. 60	Dutch Oven for masonry construction	2—12 x 20 Cast iron grates 1 Dutch Oven Door 1—12 x 12 Ash door	53
No. 70	Universal Fireplace 2 Channel grate supports with anchors	4—12 x 20 Cast iron grates 1—No. 2 Crane 1—3 x 3 x 48" steel lintel	95
	ROASTING SPITS—With 5/16" stainless steel hexagon rod and 2 forked holders		
No. 5	Electric Spit on 8¾" x 22½" framed support 24" Rod with 2 holders; Uprights 12"		12
No. 6	Hand operated Spit on framed support	Rod & holders	10
No. 14	Hand Operated Spit, adj. supports	Rod & holders	12
No. 24	Electric Spit and adjustable supports	36" rod & holders	14



No. 5



No. 14

ROASTING SPITS

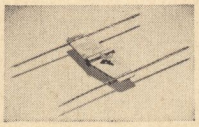
Electric or Hand-operated

Roasting Spits provide even heat for slow roasting of barbecue food for maximum flavor.

The Donley No. 5 Electric Spit, shown at the left, has a 110-volt motor and a rigid frame to bridge the fire. The 5/16" hexagonal stainless steel rod is 24" long and rotates at 3 revolutions per minute. The rod is attached to the motor by a special coupling and thumb screw. Two holding-forks with secure fasteners and stainless tines are included.

Also available is the No. 24 Electric Spit, which has the same motor, but a longer (36") rod and two supports as shown in the second illustration.

The No. 14 Hand Spit has two supports as shown at the left. The handle is of wood, the hexagonal rod is stainless steel, 5/16" thick. Holding forks have secure fasteners and stainless tines.

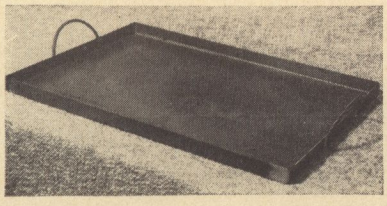


The Hand Spit with the rigid frame is designated No. 6. It is the same as the No. 14 except for the supports. It is preferred by many because of its stability.

This small illustration shows the 4-prong fork offered as an extra attachment. It is popular for cooking wieners and kabobs.

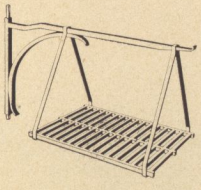
Large, General-Purpose Frying Pan

For a BIG frying pan, get one of these 22 x 16" ones and be prepared to handle a crowd. Made of steel, almost ⅛" thick, with 1" high sides, welded grease-tight at the corners. Ample rod handles, welded to the ends, provide ease of handling.



Fireplace Crane Grill

Cooking in a regular fireplace is simple if there is a fireplace crane. Some owners have even had a crane installed in their fireplace in order to use this idea. The Crane Grill Assembly consists of a 12 x 16" cast iron cooking grate and two hangers which suspend the grate over the fire as in the illustration at the left. The cranes are available in four sizes, from 22" to 41" long. Anchors are furnished, but be sure to specify if for new or existing fireplace.



THE DONLEY BOOK OF SUCCESSFUL FIREPLACES

Donley

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